DENON Hi-Fi Personal Component System

Europe Model

SERVICE MANUAL
PERSONAL COMPONENT SYSTEM
MODEL D-65

MAIN FEATURES

- **Quality power designed for high sound quality**
  30W + 30W high quality power amplifier.
- **Multi-function CD player with a full set of functions**
  Editing function for automatically dividing the tracks on CDs for recording onto sides A and B of a tape.
  Pick function for edited recording keeping the blank section at the end of the tape as short as possible.
- **Dolby B and C Noise Reduction**
  Playback and recording with high sound quality.
- **Three-course timer**
  Three timer settings are possible: Everyday, Sleep and Once.
- **Surround circuit**
  Sound with a strong sense of presence.
- **Three-way speakers**
  13cm woofer, 5cm tweeter and 2.5cm tweeter (antimagnetic type) designed for high sound quality.

BEFORE USING

Note the following points before using the D-65.

- **Moving the system**
  To prevent short-circuiting or damage of the connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
  In addition, always remove CDs before moving the system. Failing to do so may result in scratched CDs.
- **Before switching on the power**
  Check again that all connections are proper and that the connection cords are not damaged. Be sure to disconnect the power plug before disconnecting or connecting the connection cords.
- Hum may be produced if a TV set or another audio component is set near this system or their connection cords are nearby. If this happens, try changing the position of the equipment and connection cords.
- Do not move the system abruptly from a cold place to a warm place, since this may cause water droplets (condensation) to form in the equipment, preventing proper operation. If this happens, wait one hour before using the system.

Check that the following parts are included in the package aside from the main unit:

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② FM Antenna	1
③ AM Loop Antenna	1
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NIPPON COLUMBIA CO., LTD.

GENERAL SECTION

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Only discs with the mark at the right can be played on this system.

COMPACT disc DIGITAL AUDIO

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Receiver Unit	UDRA-65
Cassette Deck Unit	UDR-65
CD Player Unit	UCD-65
Speaker System Unit	USC-65
: Top Cushion	503 1061 000
: (Master) Carton	501 1707 009
Envelope Sub Assy	GEN 2433
: Polycover	505 0178 000
: Inst. Manual (4)	511 2498 107
: Inst. Manual (4)	511 2499 106
Loop Antenna	231 0922 009
Remocon (RC-164)	399 0202 009
FM Ant. Ass'y	395 0021 000
Green Point Label	513 2159 002

ADVARSEL: **USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.**

VARO! **AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.**

VARNING - **OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.**

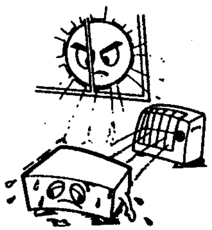
SPECIFICATIONS

• **Receiver (UDRA-65)**	
Amplifier	
Practical maximum output:	30 W + 30 W (RMS)
Bass adjustment:	100 Hz ±8 dB
Treble adjustment:	10 kHz ±8 dB
SDB (Super Dynamic Bass):	80 Hz + 8 dB
Terminals:	
AUX:	Input jacks (input sensitivity – 150 mV/47 kohm)
PROCESSOR LOOP:	(input sensitivity – 150 mV/47 kohm)
Headphones jack:	3.5 mm mini size
Mono out:	Output jacks (rated output – 2.5 V)
Surround out:	Output jacks
Tuner	
Receivable frequency range:	FM: 87.50 MHz ~ 108.00 MHz AM: 522 kHz ~ 1611 kHz
Reception sensitivity	FM: 2 μV/75 ohm AM: 20 μV/m
FM stereo separation:	35 dB (1 kHz)
Maximum external dimensions:	270 (W) × 103 (H) × 324 (D) mm (10-5/8" × 4-1/16" × 12-3/4")
Weight:	5.3 kg
Power supply:	AC 230 V, 50 Hz, AC 240 V, 50 Hz (for U.K. model)
Power consumption:	95 W
• **CD player (UCD-65)**	
Wow & flutter:	Below measurable limits (±0.001% W. peak)
Sampling frequency:	44.1 kHz
Optical source:	Semiconductor
Maximum external dimensions:	270 (W) × 89 (H) × 306 (D) mm (10-5/8" × 3-25/32" × 12-3/64")
Weight:	2.4 kg
• **Cassette deck (UDR-65)**	
Type:	Horizontal 4-track 2-channel auto reverse stereo cassette deck
Heads:	Hard permalloy recording/playback head × 1 Hard permalloy playback head × 1 Double gap ferrite erasing head × 1
Tape speed:	4.75 cm/s
Included circuit:	Dolby B and C Noise Reduction
Usable tapes:	Normal, chrome and metal
Maximum external dimensions:	270 (W) × 103 (H) × 306 (D) mm (10-5/8" × 4-1/16" × 12-3/64")
Weight:	3.6 kg
• **Speakers (USC-65)**	
Type:	3-way 3-speaker bass reflex type
Speakers used:	13 cm woofer, 5 cm tweeter and 2.5 cm tweeter
Maximum tolerable input:	60 W
Impedance:	8 ohm
Maximum external dimensions:	192 (W) × 384 (H) × 276 (D) mm (7-9/16" × 15-1/8" × 10-55/64")
Weight:	4.9 kg per speaker
• **Remote control unit (RC-164)**	
Type:	Infrared pulse
Number of buttons:	32
Maximum external dimensions:	55 (W) × 180 (H) × 18 (D) mm (2-11/64" × 7-3/32" × 45/64")
Weight:	100 g (including batteries)

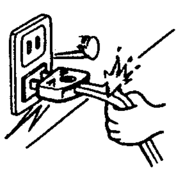
* Maximum dimensions include controls, jacks, and covers.
(W) = width, (H) = height, (D) = depth

- For improvement purposes, specifications and functions are subject to change without advanced notice.

NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION/NOTE SULL'USO

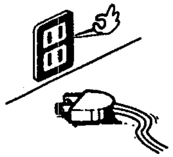


- **Avoid high temperatures**
  Allow for sufficient heat dispersion when installed on a rack.
- **Vermeiden Sie hohe Temperaturen**
  Beachten Sie, daß eine zureichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- **Eviter des températures élevées**
  Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- **Evitate di esporre l'unità a temperature alte.**
  Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.

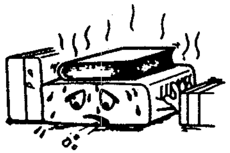


- **Handle the power cord carefully.**
  Hold the plug when unplugging the cord.
- **Gehen Sie vorsichtig mit dem Netzkabel um.**
  Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- **Manipuler le cordon d'alimentation avec précaution.**
  Tenir la prise lors du débranchement du cordon.
- **Manneggiate il filo di alimentazione con cura.**
  Agite per la spina quando scollegate il cavo dalla presa.

- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.

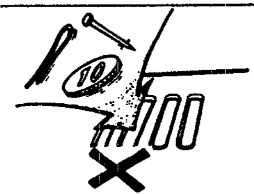


- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.

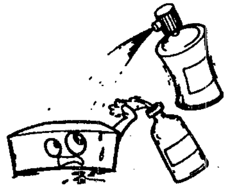


*(For sets with ventilation holes)

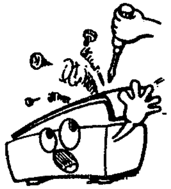
- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non coprite i fori di ventilazione.



- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto é inserito all'interno dell'unità.



- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevvi che l'unità non venga in contatto con insetticidi, benzolo o solventi.



- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontate mai, nè modificate l'unità in nessun modo.

Irregularities
- If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store of purchase.

Unregelmäßigkeiten
- Sollte das Gerät Rauch produzieren oder eigenartig riechen, stellen Sie den Netzschalter sofort auf die Position STANDBY (Bereitschaft), ziehen Sie den Netzstecker heraus und kontaktieren Sie Ihren Händler.

Anomalies
- Si de la fumée sort de la chaîne ou des odeurs bizarres, placer l'interrupteur d'alimentation immédiatement sur la position de veille (STANDBY), débrancher le cordon d'alimentation et contacter le distributeur.

Irregolarità
- Qualora il sistema dovesse produrre del fumo o degli odori strani, collocate immediatamente l'interruttore di accensione nella posizione STANDBY, disinnestate il filo di alimentazione e rivolgetevi al negozio dell'acquisto.

"SERIAL NO. ______________________
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

SAFETY IMPORTANT

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

(UDRA-65 only)

IMPORTANT
(BRITISH MODEL ONLY)

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

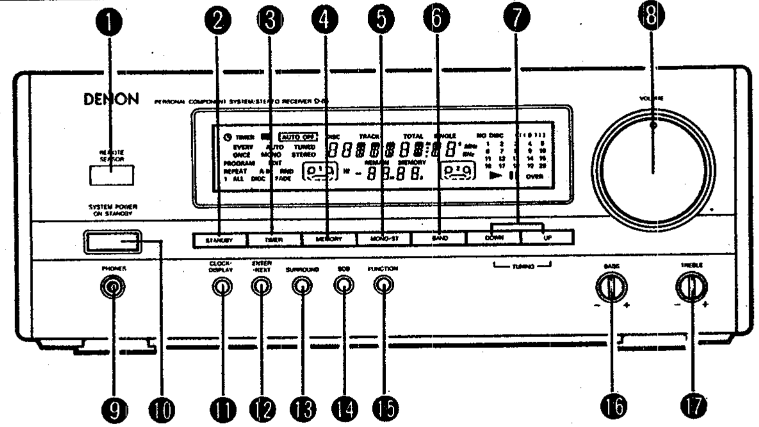
VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING- OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

"CLASS 1
LASER PRODUCT"

FRONT PANEL/FRONTPLATTE/PANNEAU AVANT/PANNELLO ANTERIORE

RECEIVER
RECEIVER
AMPLI-TUNER
RICEVITORE



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8
DENON
REMOTE SENSOR
SYSTEM POWER ON STANDBY
AUTO OFF
VOLUME
STANDBY
TIMER
MEMORY
MONO-ST
BAND
DOWN
UP
PHONES
CLOCK·DISPLAY
ENTER·NEXT
SURROUND
SDB
FUNCTION
TUNING
BASS
TREBLE
9
10
11
12
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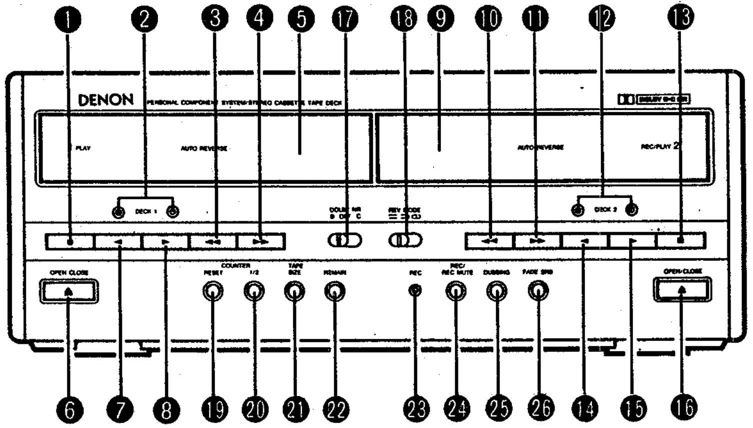
16
17

CASSETTE DECK
CASSETTENDECK
PLATINE CASSETTE
PIASTRA A CASSETTE



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17
18
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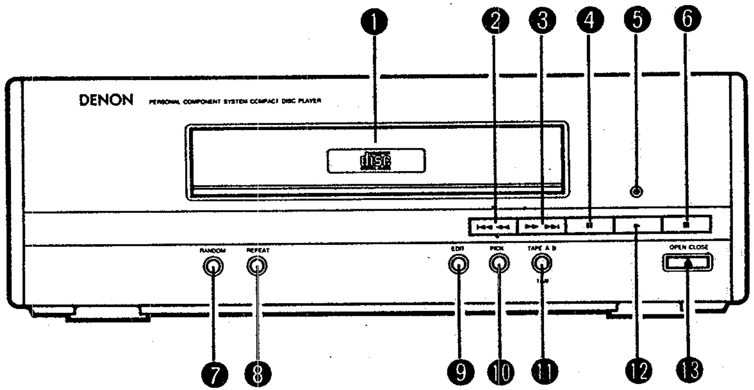
12
13
DENON
PERSONAL COMPONENT SYSTEM/STEREO CASSETTE TAPE DECK
PLAY
AUTO REVERSE
REC/PLAY 2
DECK 1
DOLBY NR
REV MODE
DECK 2
OPEN/CLOSE
COUNTER
RESET
1/2
TAPE SIZE
REMAIN
REC
REC/REC MUTE
DUBBING
FADE SW
OPEN/CLOSE
6
7
8
19
20
21
22
23
24
25
26
14
15
16

CD PLAYER
CD-SPIELER
LECTEUR CD
DISPLAY DELLA PIASTRA A CASSETTE



1
2
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4
5
6
DENON
PERSONAL COMPONENT SYSTEM COMPACT DISC PLAYER
RANDOM
REPEAT
EDIT
PICK
TAPE A B
OPEN/CLOSE
7
8
9
10
11
12
13

- As an aid to better understanding the operation method, the illustrations used in this manual may differ from the actual system.
- Als Hilfestellung zum besseren Verständnis der Betriebsmethode, erlauben wir uns den Hinweis, daß sich die Abbildungen in dieser Bedienungsanleitung leicht von dem aktuellen System unterscheiden.
- Pour faciliter la compréhension de la méthode de fonctionnement, les illustrations utilisées dans ce manuel peuvent être différentes de celles de la chaîne réelle.
- Per rendere la spiegazione del metodo operativo più facile, le illustrazioni usate in questo libretto delle istruzioni possono differire dal sistema stesso.

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Check that the following parts are included in the package aside from the main unit:

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② FM Antenna 1
③ AM Loop Antenna 1
④ Remote Controller (RC-164) 1
⑤ R6P/AA Batteries 2

1 MAIN FEATURES

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  30W + 30W high quality power amplifier.
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  Editing function for automatically dividing the tracks on CDs for recording onto sides A and B of a tape.
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  Three timer settings are possible: Everyday, Sleep and Once.
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  Sound with a strong sense of presence.
- **Three-way speakers**
  13cm woofer, 5cm tweeter and 2.5cm tweeter (anti-magnetic type) designed for high sound quality.

2 BEFORE USING

Note the following points before using the D-65.

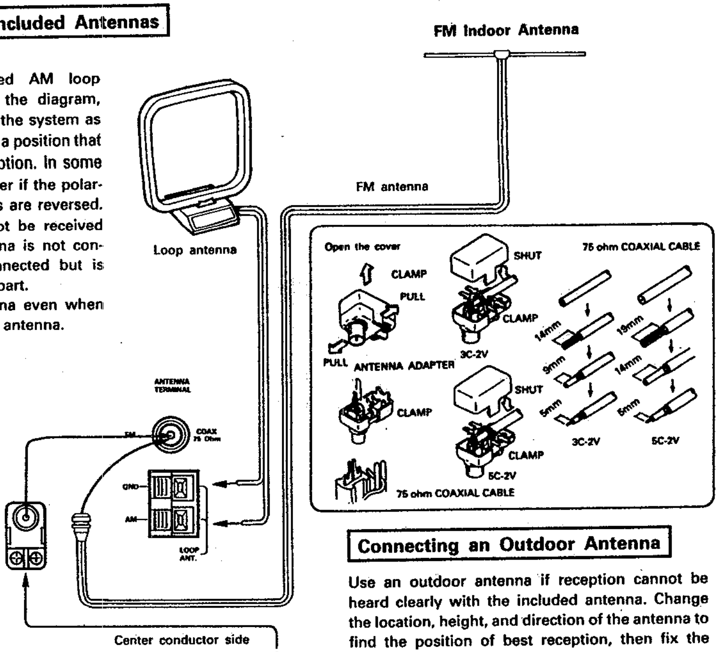
- **Moving the system**
  To prevent short-circuiting or damage of the connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
  In addition, always remove CDs before moving the system. Failing to do so may result in scratched CDs.
- **Before switching on the power**
  Check again that all connections are proper and that the connection cords are not damaged. Be sure to disconnect the power plug before disconnecting or connecting the connection cords.
- Hum may be produced if a TV set or another audio component is set near this system or their connection cords are nearby. If this happens, try changing the position of the equipment and connection cords.
- Do not move the system abruptly from a cold place to a warm place, since this may cause water droplets (condensation) to form in the equipment, preventing proper operation. If this happens, wait one hour before using the system.

3 ANTENNA CONNECTIONS

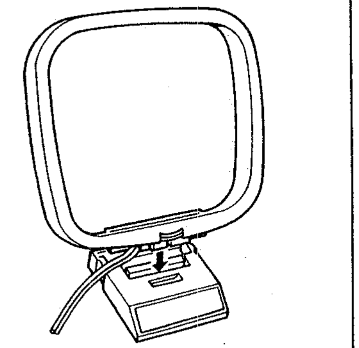
Connecting the Included Antennas

AM Loop Antenna

Assemble the included AM loop antenna as shown in the diagram, separate it as far from the system as possible, and place it in a position that provides the best reception. In some cases, reception is better if the polarities of the connections are reversed. AM broadcasts will not be received well if the loop antenna is not connected or if it is connected but is located near a metal part.
Attach the loop antenna even when using an outdoor AM antenna.



Assembling the Loop Antenna

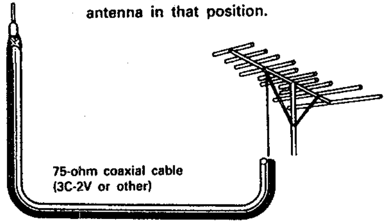


- Remove the tie fastening the loop antenna's lead and connect the lead to the antenna terminals.

- Separate the FM and AM antenna wires from the system connector wires.

Connecting an Outdoor Antenna

Use an outdoor antenna if reception cannot be heard clearly with the included antenna. Change the location, height, and direction of the antenna to find the position of best reception, then fix the antenna in that position.

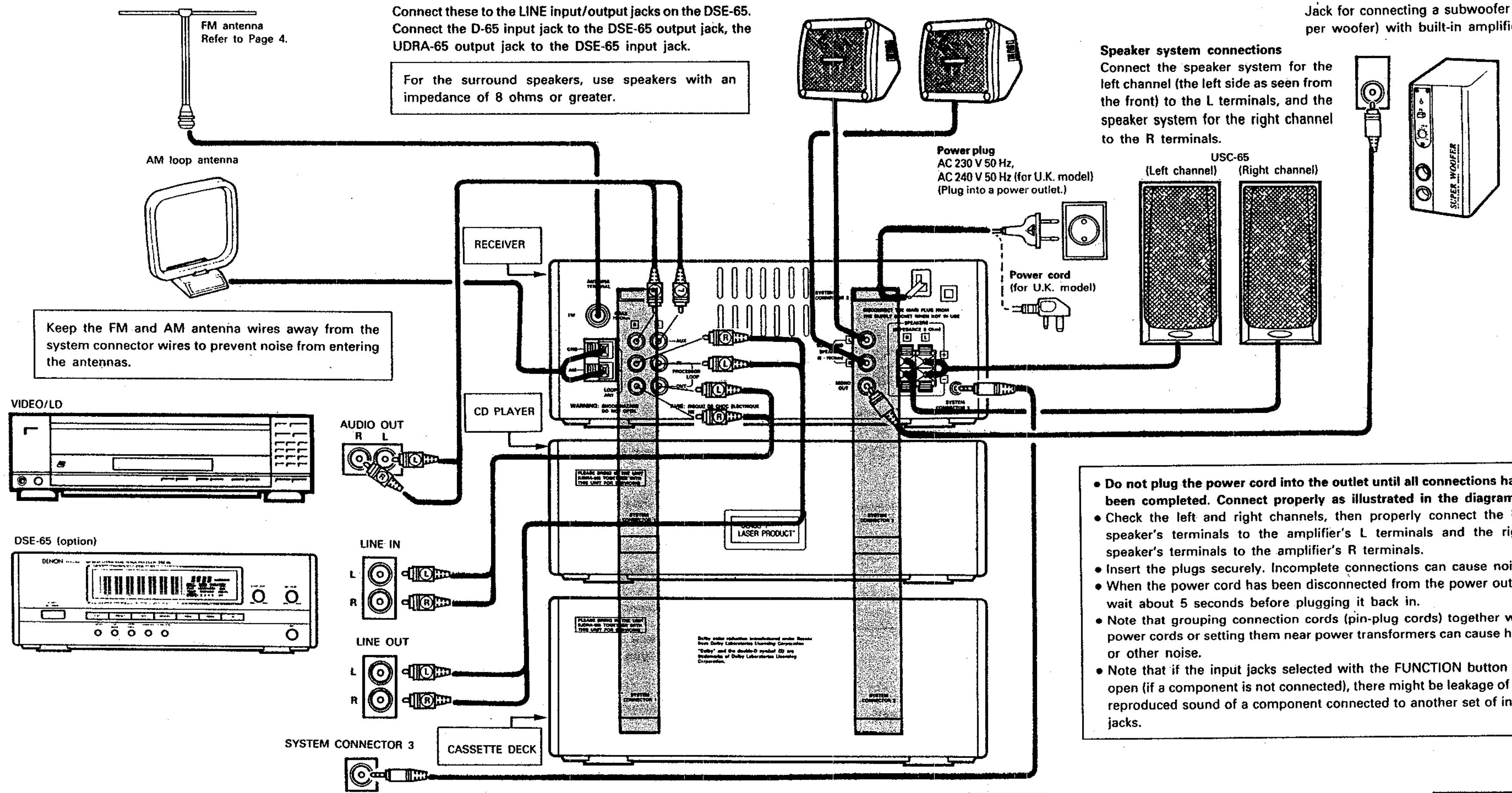


- Connect the outdoor antenna using 75-ohm coaxial cable. This will help shield the antenna from external noise.

•Places for Installing Outdoor Antennas

- Install the outdoor antenna facing a broadcast station's transmission antenna.
  When surrounded by buildings or hills, place the antenna in the location which provides best reception and try changing the direction of the antenna to obtain optimum reception.
- Do not install the antenna under power lines.
  It is extremely dangerous for the antenna to come into contact with a power line.
- Install away from roads and train tracks to prevent noise from cars and trains.
- Do not install the antenna too high, as it may be hit by lightning.

4 CONNECTIONS


FM antenna
Refer to Page 4.
AM loop antenna
Surround speaker (option)
RECEIVER
CD PLAYER
CASSETTE DECK
VIDEO/LD
AUDIO OUT
R L
DSE-65 (option)
LINE IN
L
R
LINE OUT
L
R
SYSTEM CONNECTOR 3
LASER PRODUCT
Power cord
(for U.K. model)
USC-65
(Left channel)
(Right channel)
SUPER WOOFER

Processor loop jacks

Connect these to the LINE input/output jacks on the DSE-65. Connect the D-65 input jack to the DSE-65 output jack, the UDRA-65 output jack to the DSE-65 input jack.

For the surround speakers, use speakers with an impedance of 8 ohms or greater.

Keep the FM and AM antenna wires away from the system connector wires to prevent noise from entering the antennas.

Power plug
AC 230 V 50 Hz,
AC 240 V 50 Hz (for U.K. model)
(Plug into a power outlet.)

Speaker system connections
Connect the speaker system for the left channel (the left side as seen from the front) to the L terminals, and the speaker system for the right channel to the R terminals.

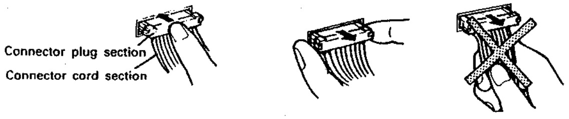
MONO OUT jack
Jack for connecting a subwoofer (super woofer) with built-in amplifier.

- **Do not plug the power cord into the outlet until all connections have been completed. Connect properly as illustrated in the diagram.**
- Check the left and right channels, then properly connect the left speaker's terminals to the amplifier's L terminals and the right speaker's terminals to the amplifier's R terminals.
- Insert the plugs securely. Incomplete connections can cause noise.
- When the power cord has been disconnected from the power outlet, wait about 5 seconds before plugging it back in.
- Note that grouping connection cords (pin-plug cords) together with power cords or setting them near power transformers can cause hum or other noise.
- Note that if the input jacks selected with the FUNCTION button are open (if a component is not connected), there might be leakage of the reproduced sound of a component connected to another set of input jacks.

Connecting the system connector cord

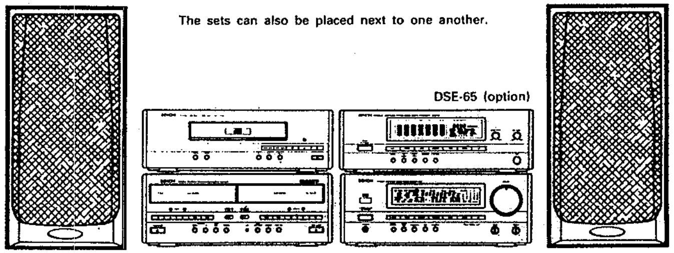
When connecting the system connector cord, insert the center of the connector plug and press until a click is heard.

To disconnect the system connector cord, press the sides of the connector plug inward then pull out.


Connector plug section
Connector cord section

Note that pulling on the connector cord section will damage the system cord.

NOTE:
This system includes digital circuitry which may interfere with the colors on a TV. Should this occur, place this unit as far away from the TV as possible.


The sets can also be placed next to one another.
DSE-65 (option)

5 PART NAMES AND FUNCTIONS

RECEIVER

❶ **REMOTE SENSOR**
Point the remote control unit at this sensor when operating it.

❷ **STANDBY button**
Press this to activate the timer at the set times. When the timer is set and this button is pressed, the standby mark, " ◷ ", appears on the display. When pressed again, the standby mark turns off. The timer will not function when the standby mark is turned off.

❸ **TIMER setting button**
Use this when setting the timer.

❹ **MEMORY button**
Use this to preset AM and FM stations.

❺ **MONO/ST (stereo mute/mono selector) button**
Stereo (mute): Set this mode to receive broadcasts in stereo. ("AUTO" is displayed.) The muting circuit is activated and the noise between stations is cut. (At the FM setting.)
Mono: Set this mode to receive in monaural, whether the broadcasts are in stereo or monaural. Set this mode when there is much noise in the stereo mute mode ("AUTO" displayed) or when the signals are weak.

❻ **BAND (AM/FM selector) button**
Press this to switch the band between AM and FM.

❼ **TUNING UP and DOWN buttons**
Use these to tune in AM and FM stations and when setting the time and timer.

❽ **VOLUME control**
Use this to adjust the overall volume.
Turn the control clockwise (↻) to increase the volume, counterclockwise (↺) to decrease the volume.

❾ **PHONES jack**
Plug in the headphones here.
No sound is produced from the speakers when the headphones are plugged in.

❿ **SYSTEM POWER button**
When this button is pressed, the power of the entire system is turned on, and the set is set to the standby mode.

⓫ **CLOCK/DISPLAY selector button**
Use this to switch the display between the frequency or function display and the clock display.

⓬ **ENTER/NEXT setting button**
Use this to move on to the next operation when setting the timer or the current time.

⓭ **SURROUND button**
Separately sold surround speakers can be connected to enjoy surround sound.

⓮ **SDB (Super Dynamic Bass) button**
Press this button for a more powerful bass sound.

⓯ **FUNCTION (input function selector) button**
Use this to switch the input.
The input switches in the following order: TUNER→TAPE→CD→AUX.

⓰ **BASS control**
Use this to adjust the bass sound.

⓱ **TREBLE control**
Use this to adjust the treble sound.

RECEIVER DISPLAY

This lights when signals are received from the remote control unit.

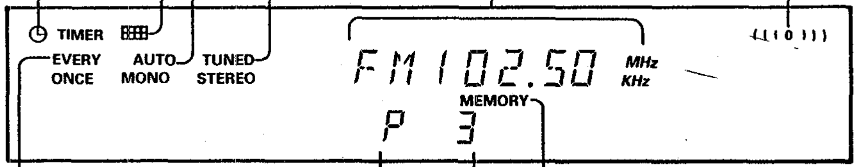
These indicate the FM reception mode.
STEREO: This lights when receiving stereo broadcasts.
AUTO : This lights when the auto mode is set with the MONO/ST button.
MONO : This lights when the monaural mode is set with the MONO/ST button.

The timer operates when this is lit.

This lights when the station is properly tuned in.

This lights in the surround mode.

The reception band, reception frequency, function, time and timer setting are displayed here.



These light when the timer is operating.

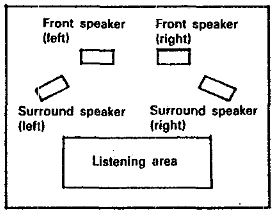
The preset number, SDB setting (on/off) and timer setting (on/off) are displayed here.

This flashes for approximately 10 seconds when the MEMORY button is pressed while presetting stations.

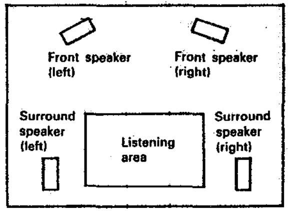
NOTE:
The standby mark, " ◷ ", is not displayed when the current time or timer is not set.

SURROUND button

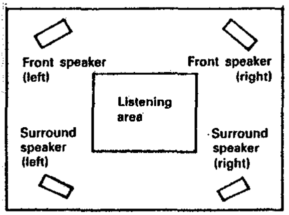
- Press this button to enjoy music with the power and presence of a theater or sound like that of a concert hall.
- Connect separately sold surround speakers and press the SURROUND button for an even more powerful sound.
- The surround speakers can be set in any position according to the conditions in the room, but it is common to set them as shown below according to the software being used. The surround speakers can also be installed in the ceiling, pointed toward the walls, etc. Set them to suit your own preferences.



Use this set-up mainly for classical music with the atmosphere of a concert hall.



Use this set-up mainly for pop, rock or disco music.



Use this set-up mainly for enjoying movies with the atmosphere of a movie theater.

➡ Continued

CASSETTE DECK

❶ **■ (stop) button:** DECK 1
Press this button when the tape is moving to stop the tape.

❷ **Direction of tape travel LEDs:** DECK 1
These indicate the direction in which the tape is moving and whether or not a tape is loaded. The indicators flash when the tape is being fast-forwarded and rewound. When a tape is moving, the direction of tape travel LEDs for the opposite deck are off.

❸ **◀◀ (rewind) button:** DECK 1
Press this to rewind the tape.
Also, press this button during playback in the ▶ (forward) direction to move back to the beginning of that selection, or during playback in the ◀ (reverse) direction to move ahead to the beginning of the next selection.

❹ **▶▶ (fast-forward) button:** DECK 1
Press this to fast-forward the tape.
Also, press this button during playback in the ▶ (forward) direction to move ahead to the beginning of the next selection, or during playback in the ◀ (reverse) direction to move back to the beginning of that selection.

❺ **Cassette tray:** DECK 1
This opens out when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again. When the cassette tray is left open for a time, it will be closed automatically.

❻ **OPEN/CLOSE button:** DECK 1
Use this button to open and close the cassette tray. This button functions in the standby mode as well.

❼ **◀ (reverse play) button:** DECK 1
Press this button to play the tape in the reverse direction.
When pressed in the standby mode, the power automatically turns on and playback starts.

❽ **▶ (forward play) button:** DECK 1
Press this button to play the tape in the forward direction.
When pressed in the standby mode, the power automatically turns on and playback starts.

❾ **Cassette tray:** DECK 2
This opens out when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again. When the cassette tray is left open for a time, it will be closed automatically.

❿ **◀◀ (rewind) button:** DECK 2
Press this to rewind the tape.
Also, press this button during playback in the ▶ (forward) direction to move back to the beginning of that selection, or during playback in the ◀ (reverse) direction to move ahead to the beginning of the next selection.

⓫ **▶▶ (fast-forward) button:** DECK 2
Press this to fast-forward the tape.
Also, press this button during playback in the ▶ (forward) direction to move ahead to the beginning of the next selection, or during playback in the ◀ (reverse) direction to move back to the beginning of that selection.

⓬ **Direction of tape travel LEDs:** DECK 2
These indicate the direction in which the tape is moving and whether or not a tape is loaded. The indicators flash when the tape is being fast-forwarded and rewound. When a tape is moving, the direction of tape travel LEDs for the opposite deck are off.

⓭ **■ (stop) button:** DECK 2
Press this button when the tape is moving to stop the tape.

⓮ **◀ (reverse play) button:** DECK 2
Press this button to play the tape in the reverse direction.
When pressed in the standby mode, the power automatically turns on and playback starts.

⓯ **▶ (forward play) button:** DECK 2
Press this button to play the tape in the forward direction.
When pressed in the standby mode, the power automatically turns on and playback starts.

⓰ **OPEN/CLOSE button:** DECK 2
Use this button to open and close the cassette tray. The button functions in the standby mode as well.

⓱ **DOLBY NR switch**
Use this to select the Dolby NR mode, "OFF", "B" type or "C" type.
When playing tapes, set this switch to the same position as when the tape was recorded.

⓲ **REV MODE switch**
Use this to select the reverse mode, ⇄ (one-side mode), ⊃ (two-side mode), or ⟲ (continuous mode).
For details, refer to page 17.

⓳ **COUNTER RESET button**
Press this to reset the tape counter to " 00.00 ".

⓴ **COUNTER 1/2 button**
Use this to switch the counter display between Deck 1 or Deck 2.

㉑ **TAPE SIZE setting button**
Use this to set the tape time according to the length of the tape being used.
For details, refer to page 8.

㉒ **REMAIN button**
Press this to switch the tape counter to the remaining time display.

㉓ **REC LED**
This lights when in the recording and recording standby modes, and flashes in the recording mute mode.

㉔ **REC/REC MUTE button**
To record, press the REC/REC MUTE button and play button. The recording pause mode is set if only the REC/REC MUTE button is pressed. If pressed again, the recording mute mode is set for approximately 5 seconds (a blank section is recorded on the tape), after which the recording pause mode is set.
If the REC/REC MUTE button is pressed for less than 0.5 seconds during recording, the recording pause mode is set. Depressing this button for 0.5 seconds or longer will set the recording mute mode for approximately 5 seconds, after which the recording pause mode is set.

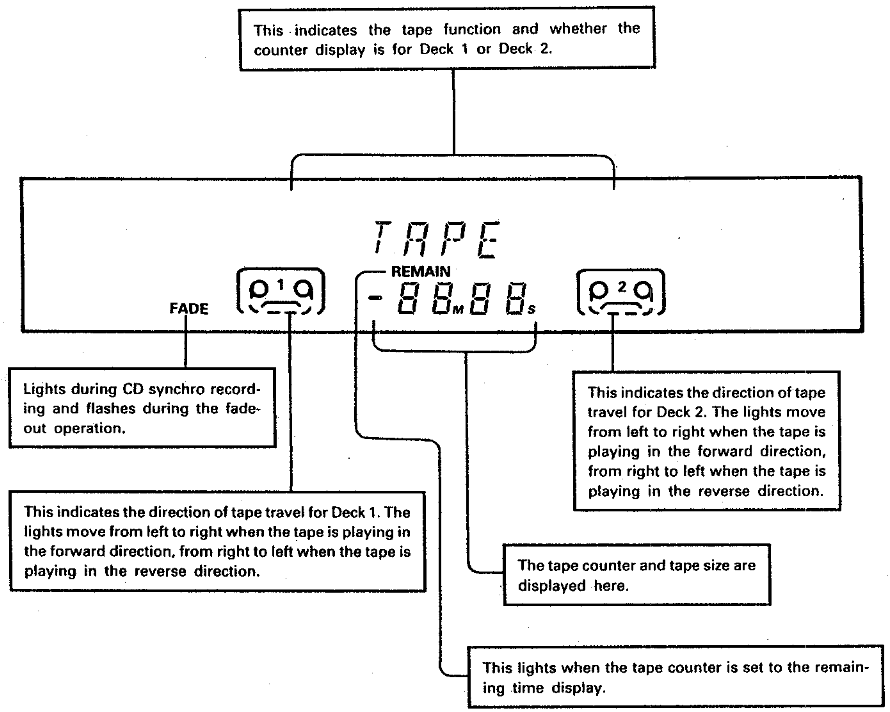
Recording pause mode:
Press the CD player's play button during the recording pause mode to start recording the CD.

㉕ **DUBBING button**
Simply press this button to copy from Deck 1 onto Deck 2.

㉖ **FADE SRS button**
Use this button for synchronized recording of CDs. The fade-out function is activated if the end of the tape is reached in the middle of a selection.
For details, refer to page 20.

- Deck 1 is for playback only, Deck 2 for both recording and playback.

CASSETTE DECK DISPLAY



This indicates the tape function and whether the counter display is for Deck 1 or Deck 2.

Lights during CD synchro recording and flashes during the fade-out operation.

This indicates the direction of tape travel for Deck 1. The lights move from left to right when the tape is playing in the forward direction, from right to left when the tape is playing in the reverse direction.

This indicates the direction of tape travel for Deck 2. The lights move from left to right when the tape is playing in the forward direction, from right to left when the tape is playing in the reverse direction.

The tape counter and tape size are displayed here.

This lights when the tape counter is set to the remaining time display.

The ⊙⊙ mark also indicates whether or not a tape is loaded. The mark does not light in the tape stop mode when no cassette tape is loaded.

USING THE TAPE COUNTER

1. Tape Counter Display

(1) Linear Counter

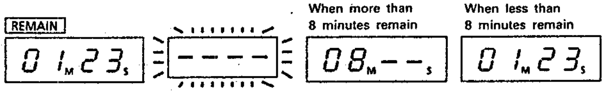
- The tape counter indicates the elapsed time of the running tape in minutes and seconds.

(Minutes) (Seconds)

- The counter is reset to "00.00" when the tape is ejected and loaded, and by the COUNTER RESET button.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape you would like to listen to or when you search for the next portion you would like to record.

(2) Remaining Time Counter (REMAIN)

- This display indicates the remaining time of the tape being used.


REMAIN
01M23S

When more than 8 minutes remain
08M--S
When less than 8 minutes remain
01M23S

- Run the tape and in about 10 seconds hyphens will flash to indicate that the remaining time is being computed. After this, if the display time is 8 minutes or longer, only the minutes digits will be displayed; if the display time is less than 8 minutes, the minutes and seconds digits will be displayed.
- The display will change to hyphens during fast forward or rewind.

2. Tape Size Selector

- Match the tape size with the tape being used.
- Press the TAPE SIZE button until the desired tape size is displayed, then press the button again while the tape size is being displayed to set it. With each press of the button, the display will change according to the following cycle.

→ C46 → C50 → C54 → C60 → C74 → C90 → C100 → C120
C54L ← C50L ← C46L ←

※C46L, C50L, and C54L indicate large-hubbed cassettes.
※Only values included in the display can be set.

3. END Display

This display indicates that the tape is reaching the end during recording or playback.

- Match the tape size with the tape you are going to use.
- The ⊙⊙ mark for strats flashing approximately 5 minutes before the end of the tape. (END DISPLAY) (This only works properly when the tape size setting matches the length of the tape being used. If they do not match, there may be a major error in the time when the mark begins flashing.)
- When the tape has been recorded or played back to its end, the flashing of the END indicator will change to steady lighting.

※Note that this indicator is only a guide and its operation will vary according to the size of the hub diameter of the tape as well as with differences of tape thickness, so that the END indicator might not light in some cases.

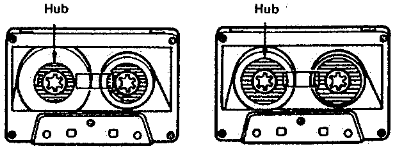
NOTE:

This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.)

Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the TAPE SIZE selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)

The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs.

- Large hubs are ones with a diameter of about 27 mm. Note that if the hub is larger than this, there will be a large error in indicating the tape travel time.



Normal hub   Large hub

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ꟿ are trademarks of Dolby Laboratories Licensing Corporation.

CD PLAYER

❶ **Disc tray**
Load the compact disc here. When the disc tray is left open for a time, it will be closed automatically.

❷ **⏮◀◀ (automatic/manual search reverse) button**
Use this button to search for the beginning of a specific track. Press it during the play, stop, or pause mode a number of times equal to the number of tracks to be skipped in the reverse direction.

❸ **▶▶⏭ (automatic/manual search forward) button**
Use this button to search for the beginning of a specific track. Press it during the play, stop, or pause mode a number of times equal to the number of tracks to be skipped in the forward direction.
* The search mode is set if buttons ❷ and ❸ are released within 0.5 seconds after being pressed, and the manual fast-reverse or fast-forward mode is set if the buttons are held in for more than 0.5 seconds.
* During the pause mode, buttons ❷ and ❸ function as the automatic search forward button and the automatic search reverse button, respectively.

❹ **II (pause) button**
Press this to stop playback temporarily.
Press the play button to resume playback.

❺ **Disc play LED**
This lights when a disc is playing, and flashes in the pause mode.

❻ **■ (stop) button**
Press this to stop playback.

❼ **RANDOM button**
Press this to play the tracks on the disc in random order.

❽ **REPEAT button**
Press this to set the repeat play mode.

❾ **EDIT button**
Press this for edited recording onto a tape, automatically dividing the tracks to be recorded on sides A and B according to the length of the tape.

❿ **PICK button**
Press this for edited recording onto a tape, keeping the empty space at the end of the tape to a minimum length.

⓫ **TAPE A/B (edit display selector)/TIME (time display selector) button**
Press this button during editing to switch the display between the program for sides A and B of the tape. Also, press this button during the play or pause modes to change the time display.
* When pressed during the play or pause modes, the time display switches between the elapsed playing time for the currently playing track, the remaining time for that track ("SINGLE" lights), and the total remaining time ("TOTAL" lights). During programmed playback, the time displayed when the "TOTAL" indicator is lit is the total remaining time for the programmed tracks.

⓬ **▶ (play) button**
Press this to start playing the disc. If pressed when the disc tray is open, the disc tray closes and playback begins. When pressed during the standby mode, the power automatically turns on and playback begins.

⓭ **OPEN/CLOSE button**
Use this to open and close the disc tray.
When pressed once, the disc tray opens out, and when pressed again the disc tray closes. This button functions even in the standby mode.

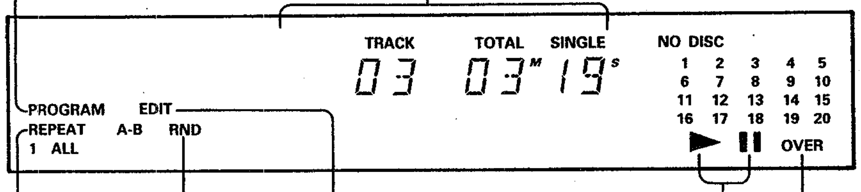
CD PLAYER DISPLAY

TRACK display
When the data on the disc cannot be read properly 00
When a disc is loaded:
- In the stop mode .... Total number of tracks
- In the play and program modes .... Track number
- When the innermost or outermost edge of the disc is reached during manual search .... [[or]]

Time display
When the data on the disc cannot be read properly 0000
When a disc is loaded:
- In the stop mode .... Elapsed playing time
- In the play and pause modes .... Elapsed time of currently playing track
- In the program mode .... Elapsed time of programmed tracks

"PROGRAM" lights in the programmed play mode.

Tape type and remaining time display
During the editing function, "C-00" is displayed, indicating the tape time.



This lights when the RANDOM button is pressed.

"▶ PLAY" lights when a disc is playing, "II PAUSE" lights in the pause mode.

This lights when there are over 20 tracks on the disc.

During the edit operation, "EDIT" will light and "A" will be displayed in the TRACK display section. The TIME display section will indicate the remaining time of side A. The recorded tracks of side A will light up in the calendar display section and the recorded tracks of side B will flash in the same display section. A press of the A/B button will display "B" in the TRACK display section and the remaining time of side B will be displayed in the same way.

The display switches as follows when the REPEAT button is pressed during playback:
1st time: "REPEAT 1" and the number of the track to be repeated on the "music calendar" light.
2nd time: "REPEAT ALL" and the numbers of all the tracks on the disc light.
3rd time: "REPEAT A-"
4th time: "REPEAT A-B"
5th time: No display
- The track number flashes if a track number of 21 or higher is set to repeat in the single track repeat mode ("REPEAT 1").

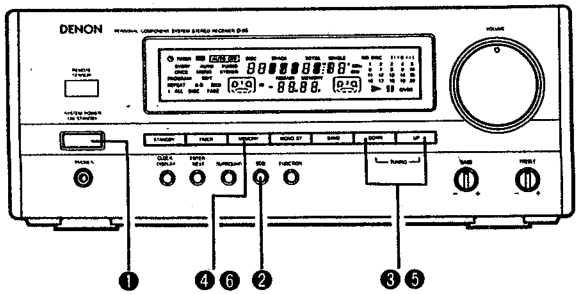
"Music calendar"
This indicates the numbers of the tracks on the disc, up to track 20.
The number of the corresponding track turns off after that track has been played.
During programmed playback, the numbers of the programmed tracks (up to track 20) light.
No numbers light if the data on the disc cannot be read properly.

- "NO DISC" lights if no disc is loaded, if the disc is loaded upside-down, or if the disc is heavily scratched or dirty.

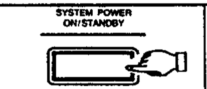
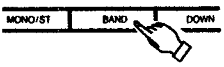
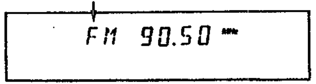
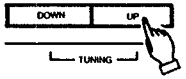
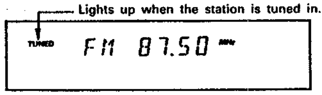
6 LISTENING TO RADIO BROADCASTS

(Check that connections are proper, referring to Page 5)

TUNING

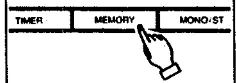
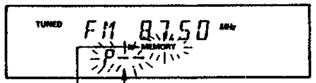
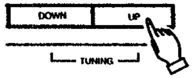
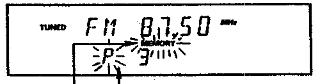
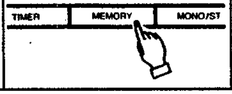
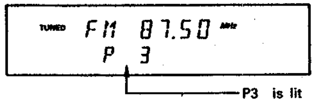

DENON
❶
❹❻ ❷
❸❺

Example: Tuning to 87.50 MHz, FM

1	Set the VOLUME control to the minimum position, then press the SYSTEM POWER button.	 SYSTEM POWER ON/STANDBY	
2	Select the FM band with the BAND button.	 MONO/ST BAND DOWN	Set to FM. 
3	Use the UP and DOWN buttons to set the frequency to 87.50 MHz. Once a station has been tuned in, use the VOLUME control to adjust the volume to the desired level.	 DOWN UP TUNING	Lights up when the station is tuned in.  TUNED FM 87.50 MHz

Presetting AM and FM Stations

Example: Presetting the (currently tuned) FM 87.50 MHz to preset number 3

4	Press the MEMORY button. MEMORY flashes for 10 seconds.	 TIMER MEMORY MONO·ST	 TUNED FM 87.50 MHz P MEMORY Flashes Flashes
5	Use the UP and DOWN buttons to call up the number to which you want to preset the station. Or, directly press the number buttons on the remote control unit. The preset number will flash.	 DOWN UP TUNING	 TUNED FM 87.50 MHz P 3 MEMORY Flashes P Flashes
6	Press the MEMORY button while MEMORY is flashing.	 TIMER MEMORY MONO/ST	 TUNED FM 87.50 MHz P 3 P3 is lit

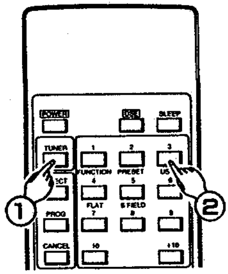
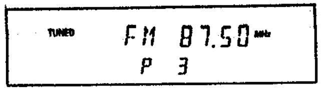
Up to 30 AM and FM stations can be preset at random using this procedure.

Auto Tuning

- When the TUNING buttons are pressed, the frequency changes in steps of 50 kHz for FM, 9 kHz for AM.
- If the TUNING UP or DOWN button is held in for more than 1 second, the frequency continues to change when the button is released. The next station is tuned in automatically and the tuning stops there. Note that tuning will not stop if the antenna input is weak and the TUNED indicator does not light. To stop the auto tuning, press the UP or DOWN button again.

Listening to Preset Stations

Example: Listening to the FM station preset at number 3

1	Press the TUNER button on the remote control unit.	 POWER SLEEP TUNER 1 2 3 FUNCTION PRESET 4 5 6 PROG FLAT S.FIELD 7 8 9 CANCEL 10 +10 ① ②	 TUNED FM 87.50 MHz P 3
2	Press button "3" on the remote control unit.		

Notes on Presetting

- When an FM station is preset, the auto or monaural mode is also set, so check the display before presetting the station.
- If a station is preset to a number at which another station has previously been preset, the previous station is cleared and the new station is preset.
- You can prevent the erasure of the preset memories by disconnecting the power cord for only a short while, but after 24 hours the presets will be erased, in which case they should be set again.

➡ Continued

7 USING THE TIMER

Setting the Timer

- Be sure to set the current time.
- Everyday timer: This turns the power on and off once at the same time every day.
- Once timer: This turns the power on and off once only.
- Sleep timer: The number of minutes after which the power is to turn off, up to 60 minutes in steps of 10 minutes, is set from the remote control unit.

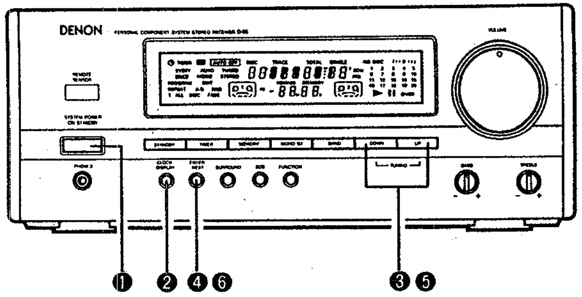
Be sure to preset the station before setting the timer.
For instructions, refer to "Presetting AM and FM Stations" on page 10.

- When the timer is not being used, press the STANDBY button and delete the standby mark " ◷ ".

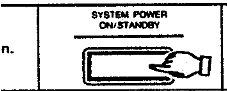
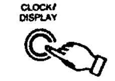
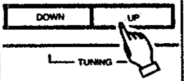
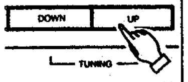
Power Failure

Should a power failure occur or if the power cord becomes unplugged from the power outlet, " 00:00 " or the time at which the power failed will flash on the time display. If this happens, reset the current time.
(Reset the current time and timer settings. If " 00:00 " was displayed, also reset the stations preset on the tuner.)
The standby mark starts flashing if there is a power failure or the power cord is unplugged while the standby mark is lit. If this happens, reset the time and the timer. (If the display reads 00:00 , also reset the tuner's preset channels.)
To make the standby mark stop flashing, reset the current time.

Setting the Current Time (A 24-hour clock display is used.)

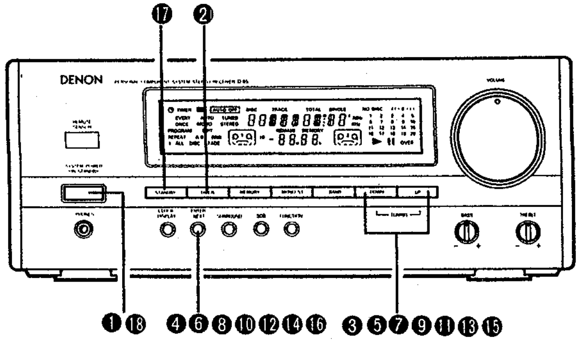


Example: Setting to 19:30 (7:30 p.m.)

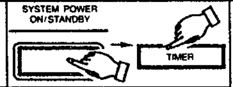
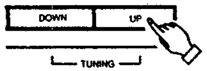
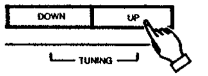
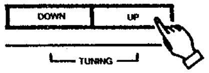
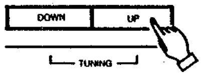
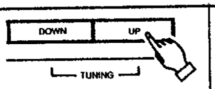
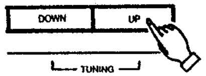
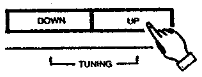
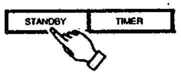
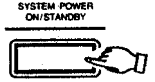
1	Press the SYSTEM POWER button.		
2	Hold in the CLOCK/DISPLAY button for 3 seconds or longer.		0:00 The hour's place flashes. (All places flash if the time has already been set.)
3	Set the hours with the UP and DOWN buttons.		19:00 The set places flash.
4	Press the ENTER/NEXT button.		19:00 The minutes' places flash.
5	Set the minutes with the UP and DOWN buttons.		19:30 The set places flash.
6	Press the ENTER/NEXT button at the sound of a time signal. The time display lights steadily and the clock starts keeping the time.		19:30 The display lights steadily and the clock starts to count from 0 seconds.

Setting the Every Day Timer

(Preset the AM and FM stations in advance)



Example: Setting the timer to turn on at 12:35 and off at 12:56.
90.00 MHz FM is being received on preset number "1".
87.50 MHz FM is set to preset number "3".

1 2	Press the SYSTEM POWER button. Press the TIMER button.	 SYSTEM POWER ON/STANDBY TIMER	Flashes TIMER EVERY ONCE TIMER
3	Press the UP button to display "EVERY".	 DOWN UP TUNING	Flashes TIMER EVERY TIMER
4	Press the ENTER/NEXT button.	 ENTER /NEXT	TIMER EVERY FUNC
5	Press the UP and DOWN buttons to display "TUNER".	 DOWN UP TUNING	TIMER EVERY TUNER
6	Press the ENTER/NEXT button.	 ENTER /NEXT	
7	Press the UP and DOWN buttons to set the preset number.	 DOWN UP TUNING	TIMER EVERY TUNED FM 87.50 MHz P 3 Flashes
8	Press the ENTER/NEXT button.	 ENTER /NEXT	Flashes TIMER EVERY 0:00 on Lights up.
9	Use the UP and DOWN buttons to set the hour at which the timer is to switch on.	 DOWN UP TUNING	Flashes TIMER EVERY 12:00 on
10	Press the ENTER/NEXT button.	 ENTER /NEXT	Flashes TIMER EVERY 12:00 on
11	Use the UP and DOWN buttons to set the minutes at which the timer is to switch on.	 DOWN UP TUNING	Flashes TIMER EVERY 12:35 on
12	Press the ENTER/NEXT button.	 ENTER /NEXT	Flashes TIMER EVERY 0:00 oFF
13	Use the UP and DOWN buttons to set the hour at which the timer is to switch off.	 DOWN UP TUNING	Flashes TIMER EVERY 12:00 oFF
14	Press the ENTER/NEXT button.	 ENTER /NEXT	Flashes TIMER EVERY 12:00 oFF
15	Use the UP and DOWN buttons to set the minutes at which the timer is to switch off.	 DOWN UP TUNING	Flashes TIMER EVERY 12:56 oFF
16	Press the ENTER/NEXT button.	 ENTER /NEXT	TIMER EVERY TUNED FM 90.00 MHz P 1
17	Press the STANDBY button.	 STANDBY TIMER	Lights up. (See NOTE) ◷ TIMER EVERY TUNED FM 90.00 MHz P 1
18	Press the SYSTEM POWER button.	 SYSTEM POWER ON/STANDBY	"TIMER ◷ " is displayed. The illumination goes off and the current time is displayed. ◷ TIMER EVERY 10:15

- When the STANDBY button is pressed and the " ◷ " mark is lit, the timer will function at the same times each day.
- To switch off the timer, press the STANDBY button and turn off the " ◷ " mark.

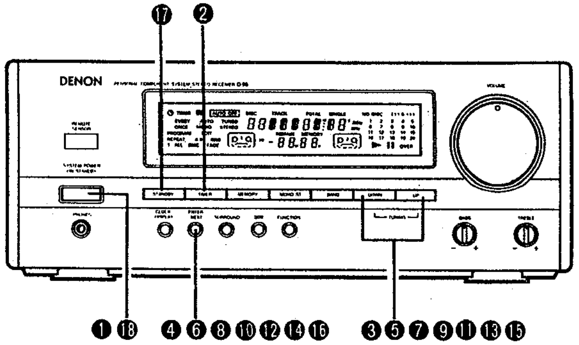
NOTE:

The standby mark " ◷ " will not light unless the current timer has been set. Should this be the case, set the current time, then press the STANDBY button.

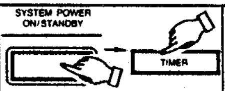
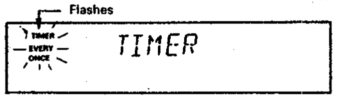
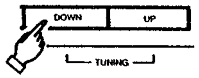
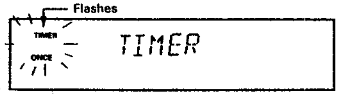
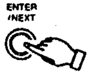
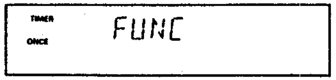
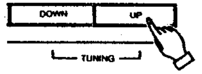
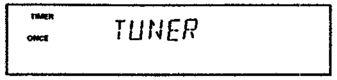
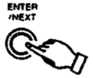
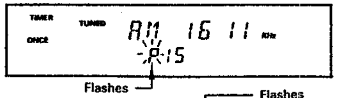
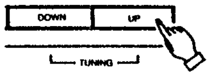
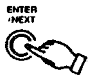
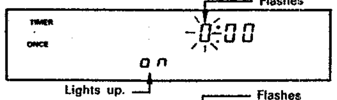
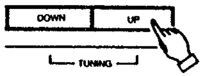
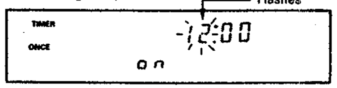
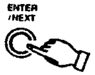
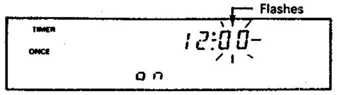
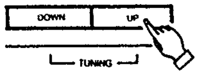
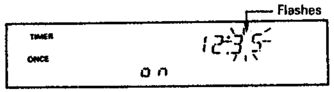
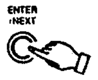
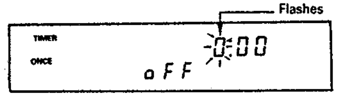
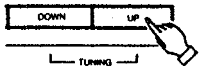
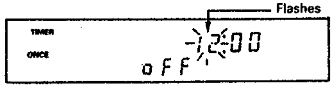
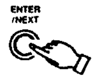
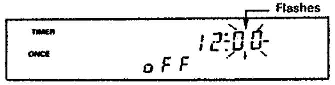
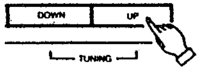
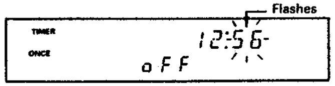
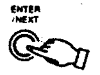
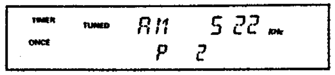
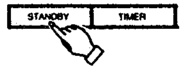
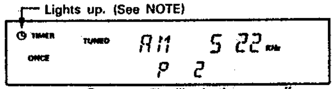
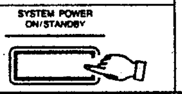
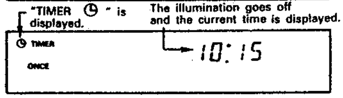
➡ Continued

Setting the Once Timer

(Preset the AM and FM stations in advance)


⓱
❷
DENON
VOLUME
❶⓲
❹❻❽❿⓬⓮⓰
❸❺❼❾⓫⓭⓯

Example: Setting the timer to turn on at 12:35 and off at 12:56.
522 kHz AM is being received on preset number "2".
1611 kHz AM is set to preset number "15".

1	Press the SYSTEM POWER button.	 SYSTEM POWER ON/STANDBY TIMER	 Flashes TIMER EVERY ONCE TIMER
2	Press the TIMER button.		
3	Press the DOWN button to display "ONCE".	 DOWN UP TUNING	 Flashes TIMER ONCE TIMER
4	Press the ENTER/NEXT button.		 TIMER ONCE FUNC
5	Press the UP and DOWN buttons to display "TUNER".	 DOWN UP TUNING	 TIMER ONCE TUNER
6	Press the ENTER/NEXT button.		 TIMER TUNED AM 16 11 kHz P15 Flashes
7	Press the UP and DOWN buttons to set the preset number.	 DOWN UP TUNING	
8	Press the ENTER/NEXT button.		 Flashes TIMER ONCE 0:00 on Lights up.
9	Use the UP and DOWN buttons to set the hour at which the timer is to switch on.	 DOWN UP TUNING	 Flashes TIMER ONCE 12:00 on
10	Press the ENTER/NEXT button.		 Flashes TIMER ONCE 12:00 on
11	Use the UP and DOWN buttons to set the minutes at which the timer is to switch on.	 DOWN UP TUNING	 Flashes TIMER ONCE 12:35 on
12	Press the ENTER/NEXT button.		 Flashes TIMER ONCE 0:00 oFF
13	Use the UP and DOWN buttons to set the hour at which the timer is to switch off.	 DOWN UP TUNING	 Flashes TIMER ONCE 12:00 oFF
14	Press the ENTER/NEXT button.		 Flashes TIMER ONCE 12:00 oFF
15	Use the UP and DOWN buttons to set the minutes at which the timer is to switch off.	 DOWN UP TUNING	 Flashes TIMER ONCE 12:56 oFF
16	Press the ENTER/NEXT button.		 TIMER TUNED AM 5 22 kHz ONCE P 2
17	Press the STANDBY button.	 STANDBY TIMER	 Lights up. (See NOTE) TIMER TUNED AM 5 22 kHz ONCE P 2
18	Press the SYSTEM POWER button.	 SYSTEM POWER ON/STANDBY	 "TIMER ⊕" is displayed. The illumination goes off and the current time is displayed. TIMER ONCE 10:15

- When the STANDBY button is pressed and the " ⊕ " mark is lit, the timer will function one time only.
- To switch off the timer, press the STANDBY button and turn off the " ⊕ " mark.

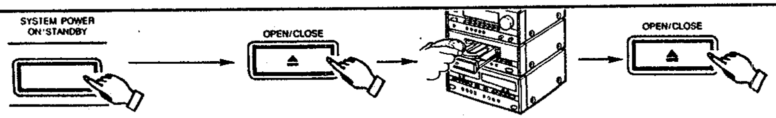
NOTE:
The standby mark " ⊕ " will not light unless the current timer has been set. Should this be the case, set the current time, then press the STANDBY button.

Ways to Use the Timer

Example 1: Waking up to the music of a compact disc.

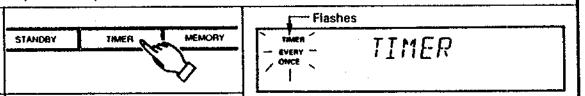
[1] EVERYDAY TIMER

1

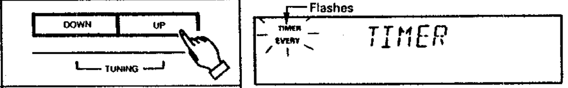

SYSTEM POWER
ON/STANDBY
OPEN/CLOSE
OPEN/CLOSE

Press the receiver's SYSTEM POWER button to switch on the power. → Press the CD player's OPEN/CLOSE button to open the tray. → Set the compact disc in the tray. → Press the OPEN/CLOSE button again to close the tray.

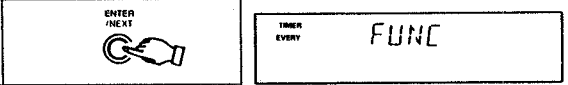
2 Press the receiver's TIMER button.


STANDBY
TIMER
MEMORY
Flashes
TIMER
EVERY
ONCE
TIMER

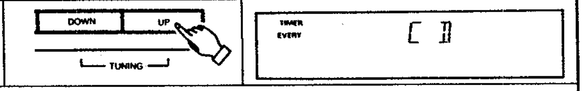
3 Press the UP button to display "EVERY".


DOWN
UP
TUNING
Flashes
TIMER
EVERY
TIMER

4 Press the ENTER/NEXT button.


ENTER
/NEXT
TIMER
EVERY
FUNC

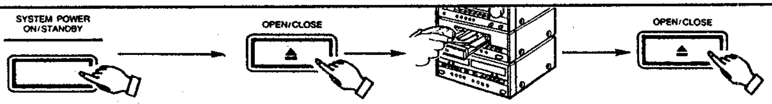
5 Press the UP and DOWN buttons of the receiver to display "CD".


DOWN
UP
TUNING
TIMER
EVERY
CD

6 Follow steps 8 to 18 under "Setting the Timer" on Page 12.

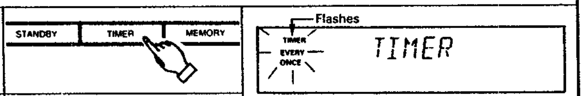
[2] ONCE TIMER

1

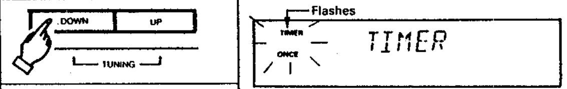

SYSTEM POWER
ON/STANDBY
OPEN/CLOSE
OPEN/CLOSE

Press the receiver's SYSTEM POWER button to switch on the power. → Press the CD player's OPEN/CLOSE button to open the tray. → Set the compact disc in the tray. → Press the OPEN/CLOSE button again to close the tray.

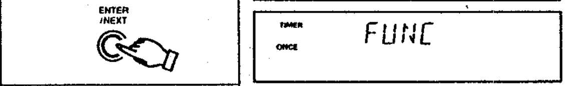
2 Press the receiver's TIMER button.


STANDBY
TIMER
MEMORY
Flashes
TIMER
EVERY
ONCE
TIMER

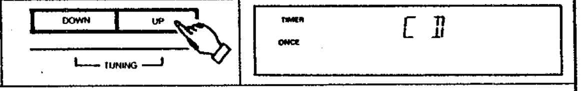
3 Press the DOWN button to display "ONCE".


DOWN
UP
TUNING
Flashes
TIMER
ONCE
TIMER

4 Press the ENTER/NEXT button.


ENTER
/NEXT
TIMER
ONCE
FUNC

5 Press the UP and DOWN buttons of the receiver to display "CD".

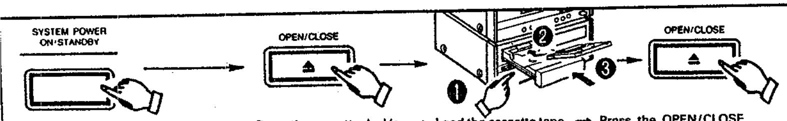

DOWN
UP
TUNING
TIMER
ONCE
CD

6 Follow steps 8 to 18 under "Setting the Timer" on Page 13.

Example 2: Waking up to the music of a cassette tape.

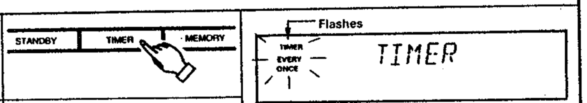
[1] EVERYDAY TIMER

1

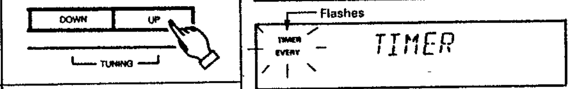

SYSTEM POWER
ON/STANDBY
OPEN/CLOSE
❶
❷
❸
OPEN/CLOSE

Press the receiver's SYSTEM POWER button to switch on the power. → Press the cassette deck's OPEN/CLOSE button to open the tray. → Load the cassette tape. → Press the OPEN/CLOSE button again to close the tray.

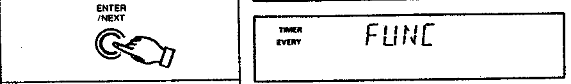
2 Press the receiver's TIMER button.


STANDBY
TIMER
MEMORY
Flashes
TIMER
EVERY
ONCE
TIMER

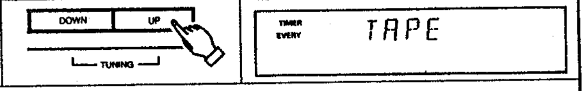
3 Press the UP button to display "EVERY".


DOWN
UP
TUNING
Flashes
TIMER
EVERY
TIMER

4 Press the ENTER/NEXT button.


ENTER
/NEXT
TIMER
EVERY
FUNC

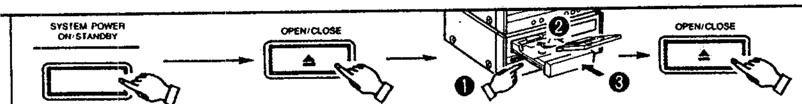
5 Press the UP and DOWN buttons of the receiver to display "TAPE".


DOWN
UP
TUNING
TIMER
EVERY
TAPE

6 Follow steps 8 to 18 under "Setting the Timer" on Page 12.

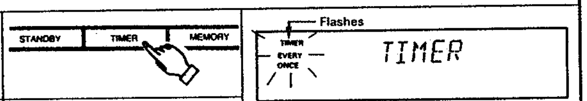
[2] ONCE TIMER

1

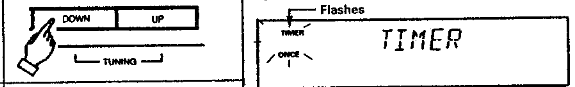

SYSTEM POWER
ON/STANDBY
OPEN/CLOSE
❶
❷
❸
OPEN/CLOSE

Press the receiver's SYSTEM POWER button to switch on the power. → Press the cassette deck's OPEN/CLOSE button to open the tray. → Load the cassette tape. → Press the OPEN/CLOSE button again to close the tray.

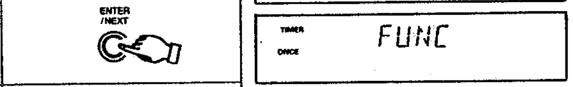
2 Press the receiver's TIMER button.


STANDBY
TIMER
MEMORY
Flashes
TIMER
EVERY
ONCE
TIMER

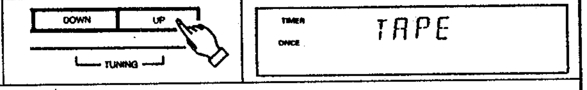
3 Press the DOWN button to display "ONCE".


DOWN
UP
TUNING
Flashes
TIMER
ONCE
TIMER

4 Press the ENTER/NEXT button.


ENTER
/NEXT
TIMER
ONCE
FUNC

5 Press the UP and DOWN buttons of the receiver to display "TAPE".

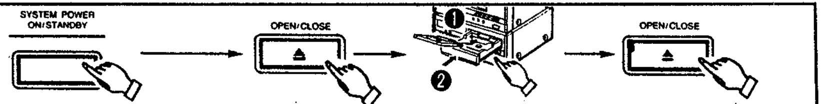
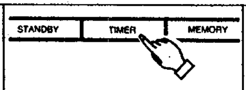
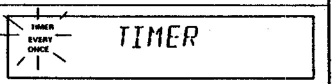
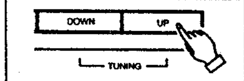
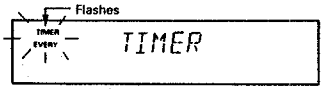
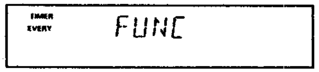
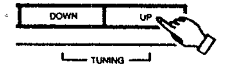
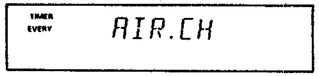

DOWN
UP
TUNING
TIMER
ONCE
TAPE

6 Follow steps 8 to 18 under "Setting the Timer" on Page 13.

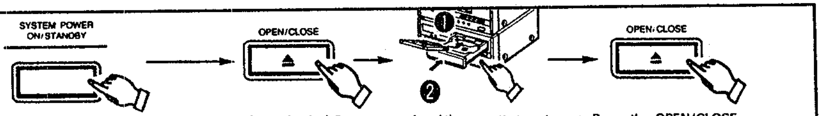
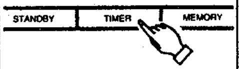
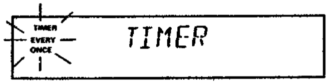
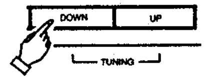
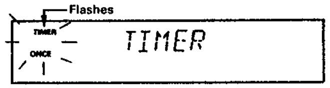
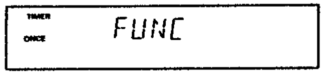
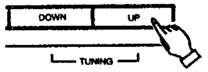
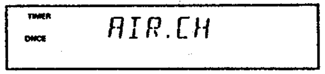
➜ Continued

Example 3: Unattended recording of radio broadcasts ("air checks")

1 EVERYDAY TIMER

1	 SYSTEM POWER ON/STANDBY OPEN/CLOSE ❶ ❷ OPEN/CLOSE Press the receiver's SYSTEM POWER button to switch on the power. → Press the deck 2 OPEN/CLOSE button to open the tray. → Load the cassette tape to which you will record. → Press the OPEN/CLOSE button again to close the tray.		
2	Press the receiver's TIMER button.	 STANDBY TIMER MEMORY	 TIMER EVERY ONCE TIMER
3	Press the UP button to display "EVERY".	 DOWN UP TUNING	 Flashes TIMER EVERY TIMER
4	Press the ENTER/NEXT button.		 TIMER EVERY FUNC
5	Press the UP and DOWN buttons of the receiver to display " AIR.CH ".	 DOWN UP TUNING	 TIMER EVERY AIR.CH
6	Follow steps 6 to 18 under "Setting the Timer" on Page 13.		

2 ONCE TIMER

1	 SYSTEM POWER ON/STANDBY OPEN/CLOSE ❶ ❷ OPEN/CLOSE Press the receiver's SYSTEM POWER button to switch on the power. → Press the deck 2 OPEN/CLOSE button to open the tray. → Load the cassette tape to which you will record. → Press the OPEN/CLOSE button again to close the tray.		
2	Press the receiver's TIMER button.	 STANDBY TIMER MEMORY	 TIMER EVERY ONCE TIMER
3	Press the DOWN button to display "ONCE".	 DOWN UP TUNING	 Flashes TIMER ONCE TIMER
4	Press the ENTER/NEXT button.		 TIMER ONCE FUNC
5	Press the UP and DOWN buttons of the receiver to display " AIR.CH ".	 DOWN UP TUNING	 TIMER ONCE AIR.CH
6	Follow steps 6 to 18 under "Setting the Timer" on Page 12.		

- Timer recording starts in the direction indicated by the tape direction indicator of deck 2.
- Check that the tape direction and REV MODE switch settings are as desired.
- The section of leader tape at the beginning of the tape cannot be recorded. To avoid missing the beginning of the recording, set the starting time to about 1 minute before the program is scheduled to start.

Checking the Timer Settings

To check the timer settings, switch on the power of the receiver, press the TIMER button, then press the UP or DOWN button, and press the ENTER/NEXT button. The timer mode, timer start mode, reception band, preset number, on time, and off time are displayed in order each time the ENTER/NEXT button is pressed. One more press returns the display to the reception frequency.
When the on time and off time have not been set, you cannot set the timer.

Changing the Timer Settings

When the timer setting operation is repeated, the previous settings are deleted and the new settings are set.

Deleting the Timer Settings

The timer settings can be cleared by pressing the TIMER button and then the UP or DOWN button and then while " FUNC " is being displayed, pressing the TIMER button.

Note about the Set Timer

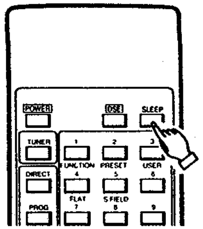
If the set time of the timer is reached while the power is on, the timer settings will take over and there will be a switch to the function that has been set on the timer.

Cancelling the Timer

Press the TIMER STANDBY button and the " ◷ " mark will go off.

Setting the Sleep Timer

(Use the remote control unit for these operations.)
Example: Setting the power to switch off in 50 minutes.

	Currently receiving 87.50 MHz, FM.	FM 87.50 MHz	
1	 POWER DSE SLEEP TUNER 1 2 3 FUNCTION PRESET USER DIRECT 4 5 6 FLAT S.FIELD PROG 7 8 9Press the remote control unit's SLEEP button.	SLEEP S--60 "60" is displayed.	
2	Press the SLEEP button again while "SLEEP" is flashing.	SLEEP S--50 "50" is displayed. "SLEEP" appears and flashes for 3 seconds. AUTO TUNED STEREO FM 87.50 MHz S--50	The power is switched off after 50 minutes.

- The display returns to " S-60 " (60 minutes) if the SLEEP button is pressed while the sleep timer is functioning.

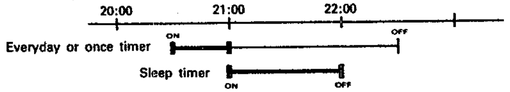
Cancelling the Sleep Timer

- To cancel the timer while it is operating in the sleep mode, press the SLEEP button, and while "SLEEP" is flashing, press the CLEAR button on the tuner-preamplifier.
- Press the SLEEP button and continue to press it until the power is switched off. When the power is switched off the sleep timer will be cancelled.

- If the sleep timer and regular timer settings overlap, the sleep timer is given priority.
- Do not press the TIMER STANDBY button after the power has been switched on with the timer. If this is done, the timer will not function properly.
- If the same time is set for the on time and off time, the power will not be switched on even when the "STANDBY" indicator is lit.
- If the timer is set for an AM or FM station and the on time of the timer is reached while listening to another station, the tuner switches to the station which was set with the timer.
- If the display is not normal, unplug the power cord, then holding in the MEMORY button and the BAND button, plug the power plug into the power outlet. This will reset the tuner to the initial settings and provide a proper display. If this is done, reset the preset stations, current time, and timer settings.

Order of Priority for the Everyday, Once and Sleep Timers

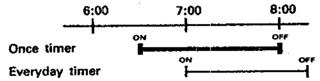
① The sleep timer has priority for the off time. (The bold lines indicate operation.)


20:00
21:00
22:00
Everyday or once timer
ON
OFF
Sleep timer
ON
OFF

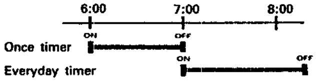
Sleep timer set (60 minutes)

Even if the power has been turned on by the everyday or once timer, if the sleep timer time reaches " 00 " before the off time which was set, the power turns off. Also, the everyday or once timer does not function if the on time set for these timers is reached while the sleep timer is functioning.

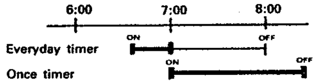
② The once timer has priority over the everyday timer. (The bold lines indicate operation.)


6:00
7:00
8:00
Once timer
ON
OFF
Everyday timer
ON
OFF

The everyday timer does not function if the on time set for it is between the on and off times set for the once timer.


6:00
7:00
8:00
Once timer
ON
OFF
Everyday timer
ON
OFF

The everyday timer functions if the on times set for the once and everyday timers are the same.


6:00
7:00
8:00
Everyday timer
ON
OFF
Once timer
ON
OFF

The once timer functions if its on time is set between the everyday timer's on and off times.

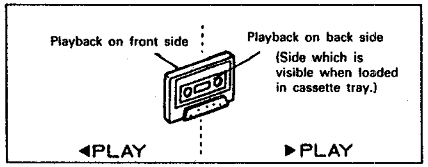
8 CASSETTE DECK

Before Recording and Playback

Auto Reverse

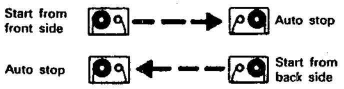
This deck is equipped with an auto reverse mechanism, so cassette tapes can be played and recorded on both sides or played continuously without having to turn them over.

■Direction of tape travel
This deck has two play buttons, one for the forward direction (front side) and another for the reverse direction (back side). The side being played can be changed during playback by pressing the opposite play button.

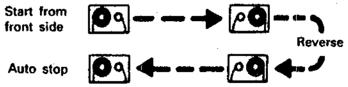


■Reverse mode
Set the reverse mode switch (REV MODE) as follows:

- **Single-side recording/playback mode (⇄)**
  In this position, only the front side or the back side of the cassette tape is played or recorded. (The tape stops automatically when the end of that side is reached.)

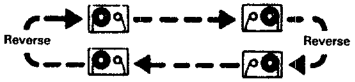


- **Two-side recording/playback mode (⊃)**
  In this position, when the end of the front side is reached, recording or playback automatically switches to the back side and continues from there. (The tape stops automatically when the end of the back side is reached.)



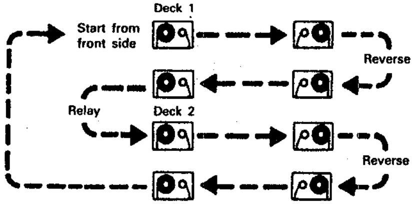
* If you start playing or recording from the back side, the tape will stop automatically at the end of the back side.

- **Continuous playback mode (⊂⊃)**
  When tape is loaded in only one of the decks, playback continues until the STOP button is pressed.



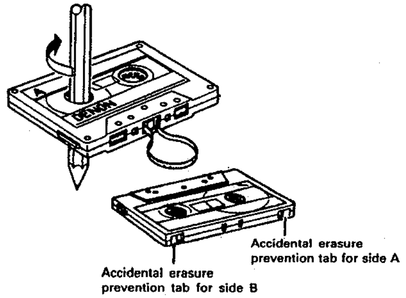
* The reverse recording/playback mode (⊃) is set automatically during recording.

- **Relay playback mode (⊂⊃)**
  When tapes are loaded in both decks, playback continues from deck 1 onto deck 2, and then back again, as shown in the diagram at the right.



Cassette Tapes

■Handling Precautions
- C-120 cassette tapes
  Avoid using 120-minute cassette tapes, since they have extremely thin tape which tends to become wound onto the capstans or pinch rollers.
- Tape slack
  If the tape is slack, it may become wound onto mechanism parts or otherwise damaged. Take up the slack with a pencil before loading the cassette.


Accidental erasure prevention tab for side A
Accidental erasure prevention tab for side B

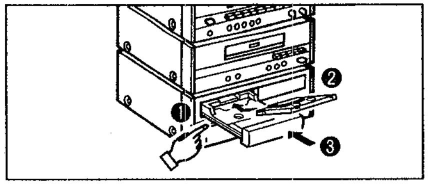
■Storage Precautions
- Avoid storing in the following places:
  - Hot, humid places
  - Dusty places
  - Places exposed to direct sunlight
  - Near magnetic fields (TVs, speakers, etc.)
- Store the cassette tape in a case equipped with stoppers to keep the tape from coming slack.

■Protecting Cassette Tapes From Being Erased Accidentally
- Cassette tapes are equipped with accidental erasure prevention tabs. To protect recorded tapes from being erased accidentally, use a screwdriver, etc., and break these tabs off.
- To record on a cassette tape whose accidental erasure prevention tabs have been broken off, place a pieced of cellophane tape over the hole.

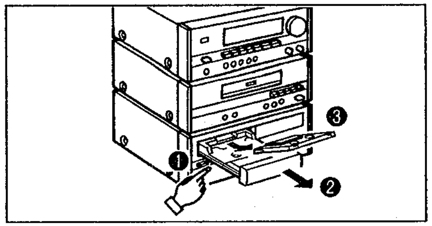
Before Operating

Loading and Unloading Cassette Tapes (Common for Deck 1 and Deck 2)

- **Loading**
  ① Press the OPEN/CLOSE button (⏏) to open the cassette tray.
  ② Set the tape in the cassette tray with the open side (on which the tape is exposed) facing away from you.
  ③ Press the OPEN/CLOSE button again to close the tray.



- **Unloading**
  ① Press the STOP button (■).
  ② Press the OPEN/CLOSE button (⏏) to open the cassette tray.
  ③ Remove the cassette tape.



Check the following before recording or playing cassette tapes:
1. Is the head dirty?...
   The sound quality will be poor if the head is dirty. Refer to Page 27.
2. Are the accidental erasure prevention tabs broken off?...
   Recording is not possible if these tabs are broken off. Refer to Page 17.

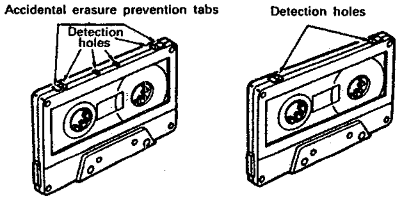
NOTE:
- Load the cassette tape on an angle with the open side facing away from you. Loading it in the opposite direction can cause damage.
- Always press the STOP button before pressing the OPEN/CLOSE button.

Using the Tape Counter (Linear Tape Counter)
- This counter displays the elapsed running time of the tape in minutes and seconds.
- The counter can be reset to 00.00 by pressing the COUNTER RESET button. Or, the counter will also be reset when the tape is loaded or unloaded.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape to which you would like to listen.

NOTE:
- This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.) Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the TAPE SIZE selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)
- The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs, and shows up in the remaining tape display.

Auto Tape Selector Mechanism

This deck is equipped with an auto tape selector mechanism which uses the detection holes in the cassette halves to automatically set the recording bias and equalization best suited for that type of tape.
- Do not use ferrichrome tapes.
- Use metal tapes equipped with detection holes. (Use of the old type of metal tape without detection holes will result in the sound having an emphasized treble region.)

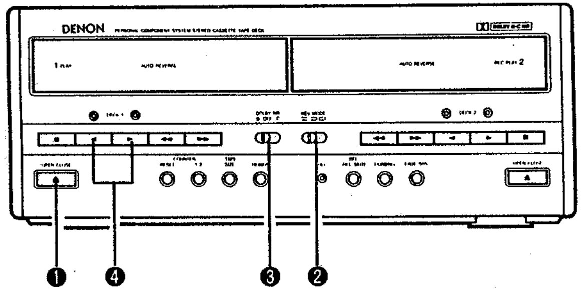


Metal tape

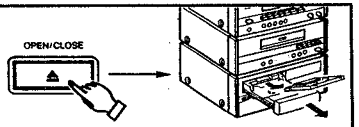
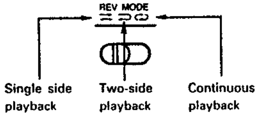
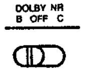
Chrome tape

9 PLAYING CASSETTE TAPES

Single Side Playback, Two-Side Playback, and Continuous Playback



- Functions common for deck 1 and deck 2.
- When operating from the remote control unit, the operation switches between deck 1 and deck 2 each time the DECK 1/2 button is pressed. The counter indicator (1 or 2) lights for the selected deck.

1	Press the OPEN/CLOSE button, and load a recorded tape into the tray. Refer to Page 17.	
2	Set the REV MODE switch. Refer to Page 17.	 REV MODE Single side playback Two-side playback Continuous playback
3	Set the DOLBY NR switch. Refer to Page 7 ❷.	 When the tape has been recorded with Dolby noise reduction, set the switch to the same type (B or C) that was used at the time of recording.
4	Press the play button (▶ or ◀).	 Playback starts in the direction of the button pressed.

Loading the tape

The tape can be loaded easily by inserting it at an angle.

Removing the tape

The tape can be removed easily by lifting it out toward yourself at an angle.

Press the stop button ■ to stop the playback.

NOTE:

When the power has been disrupted due to a power failure or disconnection of the power cord plug from the outlet, press the play button of the deck twice in succession when the deck is to be played again.

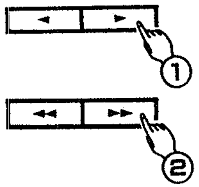
Using the MS (Music Search) Function and the Music Search Display

Using the MS (Music Search) Function

■**Use this function to move to the beginning of the following section or return to the beginning of the current selection.**

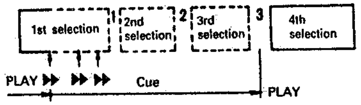
① Press ▶ or ◀.
② Press ▶▶ or ◀◀.

- In the rewind direction, playback starts from the beginning of the selection which is currently playing, and in the fast-forward direction, playback starts from the beginning of the following selection.



The tape skips by a number of selections equal to the number of times the ▶▶ or ◀◀ button is pressed.

For example:



- For the normal fast-forward or rewind operations, press the stop button ■ before pressing the ▶▶ or ◀◀ button.

Display During the Music Search Operation

During the music search operation, the number of selections being skipped is indicated on the tape counter, and this number decreases each time a blank section is detected (for example, 3 → 2 → 1).

- When skipping back to a previous selection

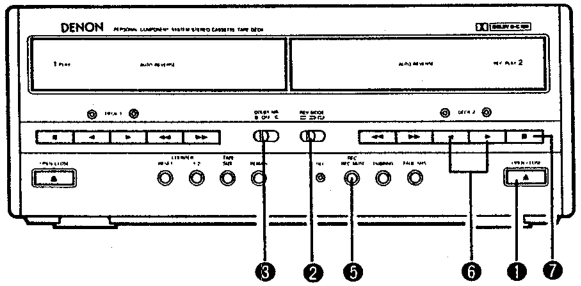
P-03 ← Number of tracks to be skipped

This lights when skipping backward

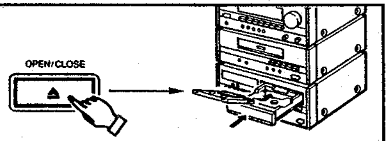
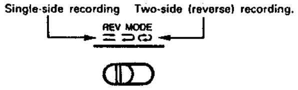
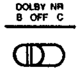
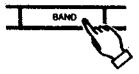
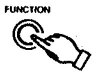
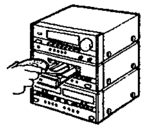
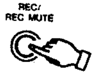
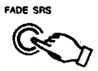
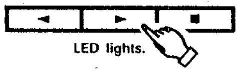
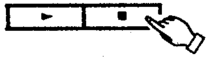
- When skipping ahead to a following selection

P 05 ← Number of tracks to be skipped

10 RECORDING CASSETTE TAPES

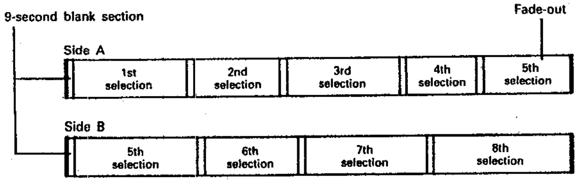

DENON
❸
❷
❺
❻
❶
❼

- The positions of the VOLUME and tone controls do not affect the sound being recorded.

1	Press the OPEN/CLOSE button ⏏ for deck 2 and load the tape to which you will record. Refer to Page 17. 		
2	Set the REV MODE switch to ⇄ or ⊃ Refer to Page 17.  Single-side recording Two-side (reverse) recording. REV MODE		
3	Set the DOLBY NR switch. Refer to Page 7 ❷.  DOLBY NR B OFF C Set to B or C to record with Dolby Noise Reduction.		
	Recording from the radio	Recording from a VDP	Recording from a CD player
4	 Press the BAND selector button. ↓ Select the station you wish to record. (Refer to Page 10.)	 Press the tuner-preamplifier's FUNCTION button and select AUX. ↓ Start playback on the VDP.	 Set the disc in the CD player. (Refer to Page 21.)
5	Press the REC/REC MUTE button.  REC/ REC MUTE The REC (recording) indicator lights.		**(5)**  Press the FADE SRS button. The FADE SRS indicator lights and recording starts.
6	Press the ▶ or ◀ button. (Recording starts)  LED lights.		
7	To stop recording, press the stop button. 		

➡ Continued

About Fade SRS Recording


9-second blank section
Fade-out
Side A
1st selection
2nd selection
3rd selection
4th selection
5th selection
Side B
5th selection
6th selection
7th selection
8th selection

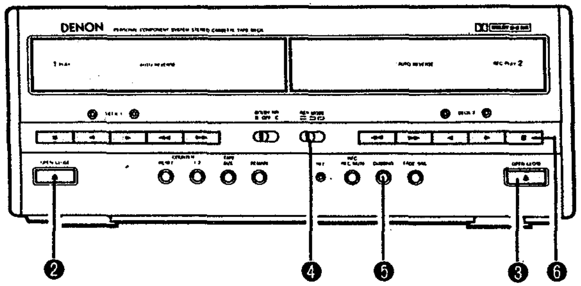
① The tracks are recorded in order starting from the first track.
② Tracks which are interrupted at the end of the tape (side A and side B) are faded out.
③ The track which has faded out at the end of side A is recorded over at the beginning of side B, and recording stops.

- Fade-out function
  During the CD synchro recording (CD SRS) function, when a track cannot be recorded in its entirety at the end of side A or B, the fade-out function gradually reduces the recording level during the last 20 seconds (20 seconds from the end of the tape).

NOTE:
- A blank portion between the tracks of about 4 seconds is created automatically in fade SRS recording.
  Therefore, a normal recording may not be possible when the last track of side A or side B is as follows:
  Example: Tracks in which pianissimo (i.e., low level sound portions) continues for a lengthy period
- When FADE SRS recording is started from part way through the tape, recording will not be possible when less than about 40 seconds remain on the tape.
- Do not press the FUNCTION (input switching) button or the CD pause button (⏸) during FADE SRS recording.
- When switching off the power during fade SRS recording, press the stop button (■) to stop the recording and then switch off the power.
- Press the FADE SRS button when the CD is stopped.

• Making a Synchro Dubbing (Copy)

Synchro dubbing (tape copying) can be made at regular speed from deck 1 to deck 2.



① Press the SYSTEM POWER button of the receiver.
② Press the OPEN/CLOSE (⏏) button and load the tape to be played back in deck 1.
③ Press the OPEN/CLOSE (⏏) button and load the tape to be recorded back in deck 2.
④ Set the reverse mode with the REV MODE switch.
(REV MODE ⇄ : ⊐ : ⊂⊃)
⑤ Press the DUBBING (synchro dubbing) button. Note that if the POWER ON/STANDBY button of the deck is pressed to switch on the power, the power of the receiver will automatically be switched on when the DUBBING button is pressed. You will be able to hear the audio normally.
⑥ To stop the dubbing, press the stop button (■) or press the DUBBING button.
The tape will automatically stop when it reaches the end and the synchro dubbing mode will be cancelled.

- Dolby NR mode during synchro dubbing
  The Dolby NR system is automatically disengaged from the panel switch during synchro dubbing (even though the display does not change) and the tape is recorded with the Dolby NR mode of the playback tape.

- You can listen to the sound of another source while synchro dubbing.
  To listen to the sound of the source during synchro dubbing, press the forward play (▶) button or the reverse play (◀) button of deck 1.

- When synchro dubbing, both decks begin running in the forward direction (from the A side).

- The synchro DUBBING button is effective in starting the operation only when both tapes are in the stopped condition.

- The following buttons do not function during the synchro dubbing operation: forward play ▶, reverse play ◀, fast forward ▶▶, rewind ◀◀, and REC/REC MUTE.

- To ensure complete reproduction, use the same length of recording tape as the playback tape, and rewind both tapes to the beginning of side A before starting the dubbing operation.

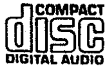
- By setting the REV MODE switch to the ⊐ or ⊂⊃ position, when the playback tape of deck 1 reverses at the end of the tape on side A, the deck 2 tape will reverse at the same time and dubbing can continue on side B.

- Match the tape size before the start of dubbing.
  During dubbing, only the tape size setting of the deck 2 side can be changed.

11 PLAYING CDs

Compact Discs

- Press the OPEN/CLOSE button (⏏) once to open the disc try, once again to close it.
- The disc tray can also be closed by pressing the play (▶) button.
  When this is done, playback automatically starts from the first track on the disc (or if the tracks are programmed, the first programmed track).
- When the disc tray is closed, the disc turns automatically for several seconds, and the number of tracks and total playing time appear on the display.

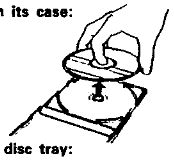


Only discs with this mark can be played.

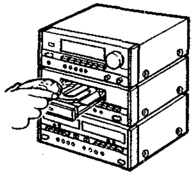
- For CDVs, only the audio part is played (the video part is not played).

Disc	Remarks
CD	
CDV	Only the audio part is played.
CD single (8 cm)	

■When removing the disc from its case: As shown in the diagram, grasp the disc along the edges, gently press down on the hole in the middle with a finger, and lift the disc. It should come out easily.



■When setting the disc in the disc tray: Always set the disc with the label side facing up. (Compact discs can only be played on one side). For 8 cm CDs, set the disc in the sunken part in the middle of the tray.

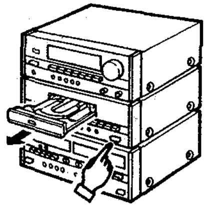


Handling the Disc Tray

Do not switch off the power or push or pull the disc tray when it is moving, since this may damage it.

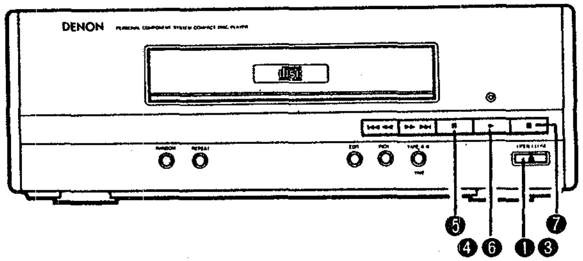
If the cord of a set of headphones, etc., gets caught in the disc tray when it is closed, press the OPEN/CLOSE button (⏏) again.

- Never set objects other than CDs in the disc tray, as this can cause damage.

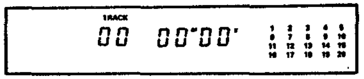
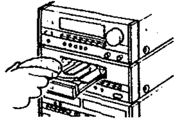
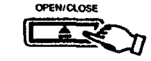
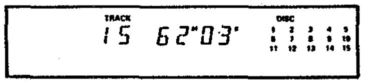
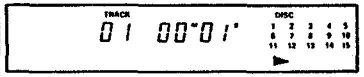


➜ Continued

Regular Play



Example: Playing a CD with 15 tracks and a total playing time of 62 minutes 03 seconds, starting from track 1

1	Press the OPEN/CLOSE button.	The disc tray opens.	 TRACK 00 00"00' 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
2	Set the CD in the disc tray. Refer to Page 21.		The display appears several seconds after the disc tray closes.
3	Press the OPEN/CLOSE button.	 The disc tray closes.	 TRACK 15 62"03' DISC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
4	Press the play button. LED lights.	CD play starts.	 TRACK 01 00"01' DISC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

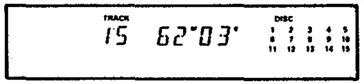
To stop play temporarily:

5	Press the pause button.		"▶ PLAY" goes off and "II PAUSE" appears. CD play is paused at the point the button is pressed.

To resume CD play:

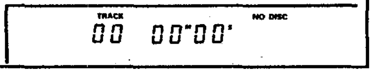
6	Press the play button.		II PAUSE" goes off and "▶ PLAY" appears. CD play resumes from the point the pause button was pressed.

To stop CD play:

7	Press the stop button.		 TRACK 15 62"03' DISC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

NOTES:

- When a disc is loaded, the track number display first reads "0 0" while the data for the number of tracks on the disc and the playing time, etc., is read (several seconds), after which the total number of tracks and total playing time appear.
- The display reads as follows if no disc is loaded, if the disc is loaded upside-down, or if the data cannot be read due to heavy scratches or dirt:

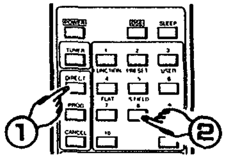


Various CD Play Functions

(Insert the disc before performing the following operations.)

❶Playing Certain Tracks ………… DIRECT SELECTION

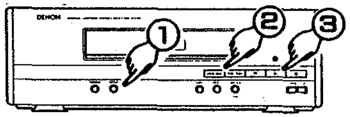
Example: Playing the 8th track
Perform this operation from the remote control unit.



① Press the DIRECT button.
② Press track button "8". "TRACK 8" appears on the display, and the 8th track begins playing.
- When the end of the track is reached, play continues on to the next track.

- For track numbers of 11 and higher, for example 15, press [+10] and [5]. For track numbers of 20 and higher, for example 23, press [+10], [+10], and [3]. For track number 20, press [+10] and [10].

❷Playing 1 Track Repeatedly ………… 1 TRACK REPEAT

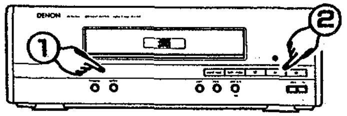


① Press the REPEAT button once.
② Press the ⏮◀◀ or ▶▶⏭ button, and select the desired track.
③ Press the play button (▶) to start play.

- When the specified track finishes playing, the pickup returns to the beginning of that track and play is repeated.
- If the REPEAT button is pressed once during play, the track will be played repeatedly.
- If the REPEAT button is pressed once during programmed play, the track will be played repeatedly.

* If the REPEAT button is pressed once while the disc is stopped, the TRACK numbers indicator flashes and the 1 track repeat play mode is set.

❸Playing All Tracks Repeatedly ………… ALL TRACKS REPEAT



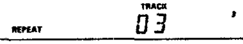
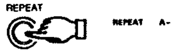
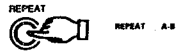
① Press the REPEAT button twice.
② Press the play button (▶) to start play.

- When the last track finishes playing, the pickup returns to the first track of the disc and play is repeated.
- If the REPEAT button is pressed twice during play, the disc will be played repeatedly.
- If the REPEAT button is pressed twice during programmed play, the program will be played repeatedly.

* If the REPEAT button is pressed twice while the disc is stopped, the TRACK numbers indicator lights and the all tracks repeat play mode is set.

❹Playing a Specific Section Repeatedly ………… SECTION REPEAT

Example: The CD has a total of 15 tracks

1st time	(1) Press the REPEAT button during CD play. 	Only that track is played repeatedly, and that track number lights on the music calendar. * With a 1-track repeat of track 21 or higher, "TRACK No." flashes.
	(2) Press the REPEAT button before CD play. TRACK 1 REPEAT 1	The total number of tracks flashes, and then ① the first track is repeated by pressing the play button ② when play is started by direct selection from the remote control or with the ▶▶⏭ or ⏮◀◀ button, only those selected tracks are played repeatedly.
2nd time	(1) Press the REPEAT button before CD play or during CD play. REPEAT REPEAT ALL TRACK 15 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	
	(2) Press the REPEAT button before CD play or during CD play. REPEAT REPEAT ALL TRACK 03 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The track numbers contained on the disc light up on the music calendar, and all tracks are played repeatedly.
3rd time	Press the REPEAT button during CD play. 	"REPEAT A-" lights up. If nothing else is done, all tracks are played repeatedly.
4th time	Press the REPEAT button during CD play. 	"REPEAT A-B" lights up. The A-B section is played repeatedly.

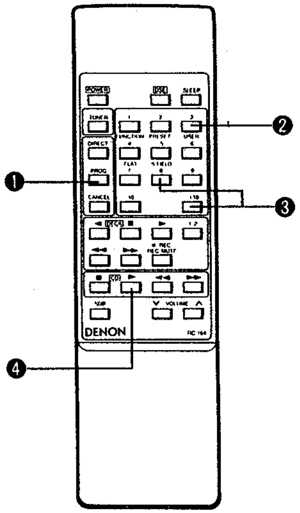
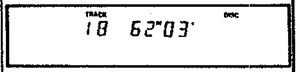
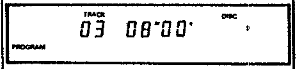
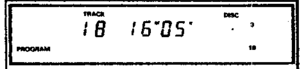
Pressing the REPEAT button once again returns the player to regular CD play.

❺Playing Certain Tracks in any Desired Order .... PROGRAMMED SELECTION

(Perform this operation from the remote control unit.)

Example: Programming track 3 to play first, track 18 to play second, on a CD with 18 tracks and a total playing time of 62 minutes, 3 seconds

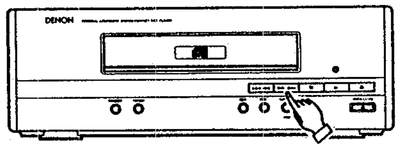
Setting and Playing the Program

1	Press the PROGRAM button.	 POWER DSL SLEEP TUNER DIRECT PROG CANCEL DECK CD VOLUME DENON RC-164 ❶ ❷ ❸ ❹	
2	Set track 3 to play first.		 After 2 seconds The display when track 3 is set to play first Time of first track: 8 minutes, 00 seconds
3	Set track 18 to play second.		 After 2 seconds The display when track 18 is set to play second Total time of tracks 1 and 2: 16 minutes, 05 seconds
4	Press the play button.		The tracks start playing in the programmed order.

- The numbers of the programmed tracks go off once the tracks are played.
- The time display will read "— — M — — S" if a track number of 31 or higher is set in the program.
- When a program is set during CD play after a direct selection, the track currently playing is set as the first track in the program.
- Up to 20 tracks of your choice from among track numbers 1 through 99 can be programmed with this CD player.
- If you attempt to set a track number that is greater than the number of tracks on the disc, that track number will not be displayed when the buttons are pressed.
- Programming is also possible when the disc tray is open. In this case, track numbers greater than the number of tracks on the disc can be programmed, but these are ignored when the disc is played.
- There is a silent interval of 4 seconds between tracks. This is has been designed to create a blank section of 4 seconds between selections when recording programmed tracks onto tape.
- The entire program is cleared when the disc tray is opened or closed (by pressing the ≜ button).
- If you make a mistake when programming tracks, press the CANCEL button and program again. (Each press of the CANCEL button cancels the last track.)
- An A-B section repeat is not possible during programmed play.
- Other operations possible during programmed play:
  The quick search, pause, skip monitor, and other operations can be used during programmed play. To move to the beginning of the previous track with the quick search operation, press I◀◀ ◀◀ once, then once again while the time display reads " 00.00. ". To move to the beginning of the following track, press ▶▶ ▶▶I once, regardless of the time display.
- Perform programming and canceling in the stop mode.

➡ Continued

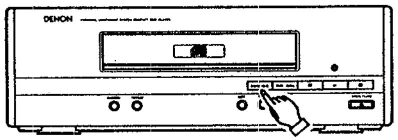
❻Moving to the Next Track During CD Play .... QUICK SEARCH



Press the auto search forward button (▶▶ ▶▶I).

- Each press of the auto search forward button (▶▶ ▶▶I) moves the pickup to the beginning of following tracks.

❼Moving Back to the Beginning of the Current Track During CD Play .... QUICK SEARCH



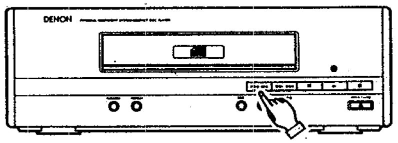
Press the auto search backward button (I◀◀ ◀◀).

- Each press of the auto search backward button (I◀◀ ◀◀) during the search operation moves the pickup to the beginning of previous tracks.

❽Searching for Tracks While Listening to the Sound .... SKIP MONITOR

- Use this to skip through a disc listening to the sound at high speed.
  This function is convenient when searching for a certain section within a long track.
- Use the skip monitor function to find the desired position, then release the search button to start regular playback from there.

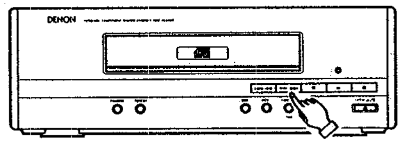
1 Forward skip monitor



During CD play, press and hold in the forward search button (▶▶ ▶▶I) to skip forward while listening to the sound.

- The track number and elapsed playing time of the track being skipped through are on the display.
- If the end of the last track on the disc is reached while pressing the search button, (JJ) appears on the display and the skip monitor operation stops. To resume CD play, press the search backward button (I◀◀ ◀◀) until (JJ) switches to the track number, then perform a different operation.

2 Backward skip monitor



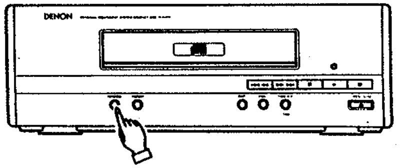
During CD play, press and hold in the backward search button (I◀◀ ◀◀) to skip backward while listening to the sound.

- The track number and elapsed playing time of the track being skipped through are indicated on the display.
- If the beginning of the first track on the disc is reached while pressing the search button, (CC) appears on the display and the skip monitor operation stops. To resume CD play, press the search forward button (▶▶ ▶▶I) until (CC) switches to the track number, then perform a different operation.

If the forward or backward skip button is pressed during programmed CD play and released at a track which has not been programmed, the next programmed track will be played once that track has been played to the end.

❾Playing Tracks in Random Order .... RANDOM SEARCH

- The function plays each track on the disc once in random order.

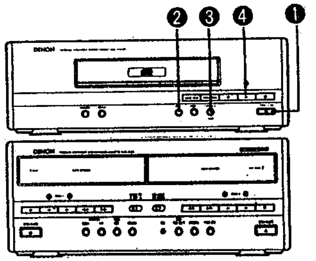


- A press of the RANDOM button lights the RND indicator to show that the random mode has been set. Random search will begin when the play button is pressed and the disc will start playing automatically.
- Simply pressing the RANDOM button during CD play will start the random search and start random play.
- Pressing the RANDOM button when a program has been set will play the programmed tracks in random order.
- Pressing the RANDOM button when repeat play has been set will play the tracks through randomly one time, and each time following this there will be a random search with a different pattern.
- The A-B section repeat and the 1-track repeat are not possible during random play.
- During the search operation, the track numbers of the disc from track 1 to the last track will be repeatedly displayed at high speed in the TRACK NO. section, and the following tracks to be played will not be known from the end of the search to the time CD play begins.
- Pressing the RANDOM button when 1-track repeat has been set will automatically change the setting to all tracks repeat and these tracks will be played randomly.

NOTE:

Random play is not possible during the edit operation.

Edited Recording onto Sides A and B of a Tape (EDIT)



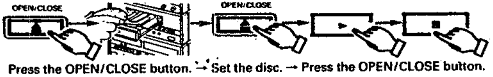
Editing is possible with CDs containing up to 20 tracks.

Before starting the edited recording operation, load the cassette tape to which you will record into deck 2 with side A facing up.
The leader tape is automatically taken up before recording starts.
(Set the REV MODE switch to the ⊐ position.)

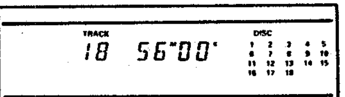
❶Automatic Edited Recording .... RECORDING IN THE SAME ORDER AS ON THE DISC

Example: Recording a disc with 18 tracks and a total playing time of 56 minutes onto a C-60 cassette tape

1


OPEN/CLOSE
OPEN/CLOSE

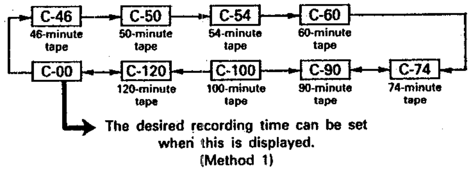
Press the OPEN/CLOSE button. → Set the disc. → Press the OPEN/CLOSE button. → Press the play button and set the function to CD. → Press the stop button.


TRACK
18 56"00'
DISC
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18

2

EDIT ◎ Press the EDIT button to set the tape length.
Press the EDIT button four times when using a 60-minute (C 60) tape.
(The tape length is to total time of sides A and B.)

The display changes as follows each time the EDIT button is pressed. (When the tape time has already been set, the display will change in order starting at that time each time the EDIT button is pressed.)


C-46
46-minute tape
C-50
50-minute tape
C-54
54-minute tape
C-60
60-minute tape
C-00
C-120
120-minute tape
C-100
100-minute tape
C-90
90-minute tape
C-74
74-minute tape

The desired recording time can be set when this is displayed. (Method 1)

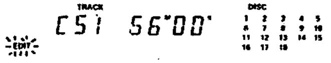
↓

Example: For a 36-minute tape, use the ⏮ ⏪ or ⏩ ⏭ button to set 36.
To set the tape length using the remote control unit, use the number buttons. For example, in the case of a 30-minute tape, press +10 twice and press 10.

↓

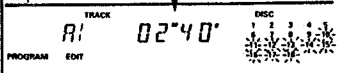
If you make a mistake, press the EDIT button to display " C-00 ", then start over again.

Setting the desired recording time (Method 2)
Select a tape length close to the desired time, then make a fine adjustment using the ⏮ ⏪ or ⏩ ⏭ button.
For example, to set 51 minutes, select C-50, then press the ⏩ ⏭ button once to set C-51.


TRACK
C51 56"00'
EDIT
DISC
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18

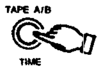
"EDIT" flashes for 2 seconds

2 minutes 40 seconds extra on side A


TRACK
A1 02"40'
PROGRAM EDIT
DISC
1 2 3 4 5

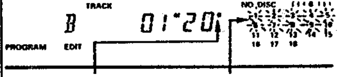
Tracks for side A light up. Tracks for side B flash.
(Tracks 1 through 9 are recorded on side A.)
(Tracks 10 through 18 are recorded on side B.)

3


TAPE A/B
TIME

A/B button is pressed. (Use this to check the extra time on side B.)

The display changes between sides A and B each time the TAPE


TRACK
B 01"20'
PROGRAM EDIT
NO DISC
11 12 13 14 15
16 17 18

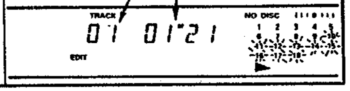
1 minute 20 seconds extra on side B.

Tracks for side A flash. Tracks for side B light up.

4

Press the play button.

Track number — Elapsed time


TRACK
01 01"21
EDIT
NO DISC
1 2 3 4 5

- Note that in some cases, even if the tape is longer than the total playing time on the disc, it may not be possible to record all the tracks onto the tape, since they are divided onto sides A and B. In such cases, the OVER indicator flashes.

NOTE:

- With edited recording, side B of the tape will be recorded automatically even when the REV MODE switch of the deck is set to the ⇄ position.
- During edit recording, buttons other than the following will not be operational: CD stop button and OPEN/CLOSE button, TAPE A/B button, TIME button, deck stop button, OPEN/CLOSE button of deck 1, ▶▶ button, ◀◀ button, COUNTER RESET button, and COUNTER 1/2 button.
- When using a recorded tape for edited recording, the tape should be erased before use, since when the tape is longer than the set time, an unrecorded section of side B will remain after the tape stops.
  When a tape which has been recorded with this system is played back, there will be 4-second blank portions between tracks (for making it easy to reach the beginning of a track). This will differ from the actual silent portions between the tracks on the disc, and so there will be some error in the actual remaining time of the tape and the displayed time.

❷Programmed Edited Recording .... **RECORDING CERTAIN TRACKS IN ANY DESIRED ORDER**

① Follow the instructions under "PROGRAMMED SELECTION" on Page 23 to program the tracks.
② Perform steps 2 through 4 under the aforementioned "Automatic Edited Recording".

Programmed CD Play Using the Search Buttons (I◀◀ ◀◀ ▶▶ ▶▶I)

Pressing the PROGRAM button of the remote control unit will light up the "PROGRAM" indicator. When the disc is stopped, programming can be done with the search buttons (I◀◀ ◀◀ ▶▶ ▶▶I) on the CD player.

- Select the tracks with the search buttons, then press the PROGRAM button to program them.
- The search buttons (◀◀ ▶▶) can be used to change the track numbers continuously.
- After the track numbers have been selected with the search buttons, if the play button is pressed to start CD play before the PROGRAM button is pressed, the last track of the program set up to this point will be played.
  In this case, the tracks selected with the search buttons will not be programmed.

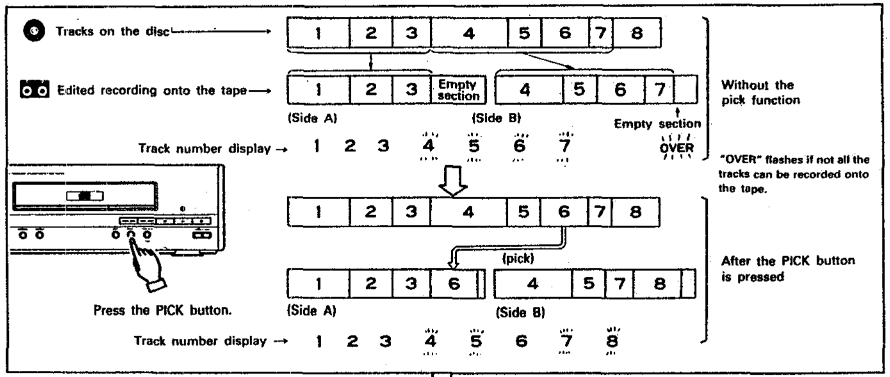
➡ Continued

Convenient Functions for Edited Recording onto Tapes

Pick Function .... **PICK**

With automatic edited recording or programmed edited recording (see pages 25), the tracks are recorded in order from the first track on the disc or in the programmed order, so in some cases long empty sections may be left at the end of the tape. The pick function reduces the length of these empty sections.

The pick function is set after completing the settings for automatic edited recording or programmed edited recording and before pressing the play (▶) button. (Just press the PICK button. The rest is performed automatically.)

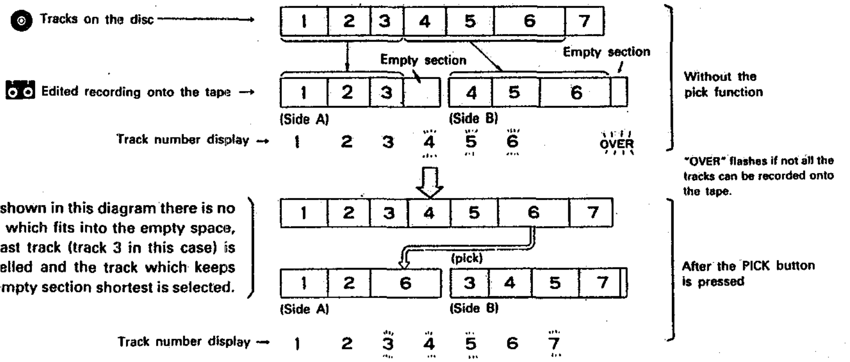


Tracks on the disc
1 2 3 4 5 6 7 8
Edited recording onto the tape
1 2 3 Empty section 4 5 6 7
(Side A)
(Side B)
Empty section
Track number display →
1 2 3 4 5 6 7 OVER
Without the pick function
1 2 3 4 5 6 7 8
(pick)
1 2 3 6 4 5 7 8
Press the PICK button.
(Side A)
(Side B)
Track number display →
1 2 3 4 5 6 7 8
After the PICK button is pressed

"OVER" flashes if not all the tracks can be recorded onto the tape.

After pressing the PICK button, press the play button to start recording.

■Example of cases when there is no track which fits in the empty section



Tracks on the disc
1 2 3 4 5 6 7
Empty section
Empty section
Edited recording onto the tape →
1 2 3 4 5 6
(Side A)
(Side B)
Track number display →
1 2 3 4 5 6 OVER
Without the pick function
1 2 3 4 5 6 7
(pick)
1 2 6 3 4 5 7
(Side A)
(Side B)
Track number display →
1 2 3 4 5 6 7
After the PICK button is pressed

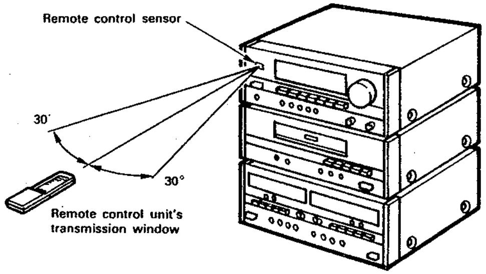
"OVER" flashes if not all the tracks can be recorded onto the tape.

If as shown in this diagram there is no track which fits into the empty space, the last track (track 3 in this case) is cancelled and the track which keeps the empty section shortest is selected.

12 REMOTE CONTROL UNIT

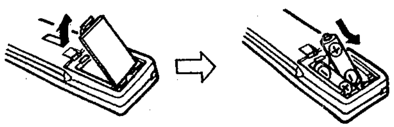
Cautions on Use

1. The D-65 is supplied with a remote control unit (RC-164) for system control.
2. Replace the batteries with new ones when the transmission distance possible with the remote control unit shortens.
3. For longer battery life, remove the batteries when not using the remote control unit for long periods.
4. When replacing batteries, use two new batteries. Never use an old battery with a new one.
5. Do not use two different types of batteries.
6. Do not heat batteries or take them apart.
7. Be careful that the remote control sensor is not exposed to direct sunlight or strong light from lighting fixtures.
8. The remote control sensor is located on the tuner. Point the remote control unit at the sensor, then press the buttons for the desired operation.
9. Operate the remote control unit within the range illustrated in the diagram.

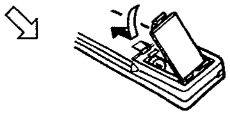


Inserting the Batteries

① Open the battery case lid on the back of the remote control unit.



② Insert the two batteries (R6P, AA) in the proper direction.



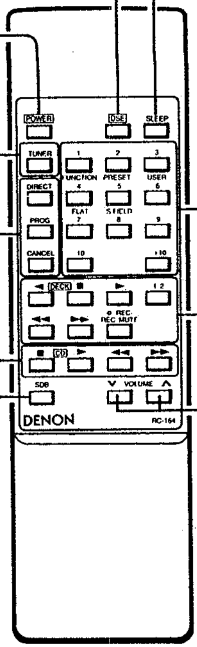
③ Set the battery case lid back in place.

▦ appears at the upper left corner of the reveiver's display when a signal is received.

- The remote control unit can be used at a distance of about 7 meters from the remote control sensor, but this distance will be shorter if there are obstacles in the way or if the remote control is operated from an angle.

10. Do not press buttons on the remote control unit and on the main unit at the same time. Doing so will lead to a malfunction.
11. If ▦ appears on the receiver's display due to incident light even though the remote control unit has not been operated, it is best to move the set or place it in a different direction. Even if this happens, it will not cause a malfunction with remote control unit.
12. When adjusting the volume continuously with the remote control unit, the volume adjustment will stop if the remote control unit is moved away from the remote control sensor. Should this happen, press the button again to continue changing the volume.

Button Names and Functions



DSE button

Press this when using the separately sold DSE-65. When pressed, the functions of the number buttons switches to the operations indicated underneath the buttons.

POWER

Press this to switch on the power for the entire system or set the system to standby.

TUNER

Press this to listen to the preset stations.

CD Play

DIRECT button
Press for direct track selection of CD player.

PROGRAM button
Press for programmed selection of CD player.

CANCEL button
Press once during programming to cancel the last track programmed.

Operating the CD Player

Stop button (■)
Press to stop CD play.

Play button (▶)
Press to start CD play.

Manual search backward button (◀◀)
Manual search forward button (▶▶)
Press these to quickly move backward or forward.

SDB (Super Dynamic Bass)

Press this button for more powerful bass sound. Press again to return to the original setting.

SLEEP

Press this to set the sleep timer.

Number buttons

After pressing TUNER, these buttons call up the preset stations. When used with CD play, after pressing DIRECT or PROGRAM, these buttons specify the tracks to be played.

Operating the Cassette Decks

Deck 1/2 button
Press this to select the deck to be operated.

Stop button (■)
Press this to stop the tape deck.

Forward play button (▶)
Press this to play back or record in the forward direction.

Reverse play button (◀)
Press this to play back or record in the reverse direction.

● REC/REC MUTE button (recording/recording mute button)
To set the recording mode when in the stop mode, press this button, then press either the "▶" or the "◀" button. When pressed during the recording or recording pause mode, a blank section of approximately 5 seconds is created on the tape, after which the deck is set to the recording pause mode.

Rewind button (◀◀)
Press this to rewind the tape.

Fast-forward button (▶▶)
Press this to fast-forward the tape.

MASTER VOLUME

Adjusts the volume.
Press V to lower the volume, and Λ to raise it.

When the DSE button is pressed, number buttons 1, 2, 3, 4 and 5 operate as shown below. Use this when using the separately sold DSE-65.

Button 1 → Function
Button 2 → Preset
Button 3 → User
Button 4 → Flat
Button 5 → S. field

13 AUTO ON FUNCTION

- When the CD or deck play button, or the OPEN/CLOSE button is pressed from the standby mode, the power is switched on automatically, and the play or open/close operation is performed.
- The power also turns on when the tuner number buttons (preset buttons) on the remote control unit are pressed.

14 IMPORTANT INFORMATION

• Head Cleaning

After the cassette deck has been used for a while, powder from the tapes and dirt adhere to the head and lower the sound quality.
Use a head cleaning cassette tape to clean.

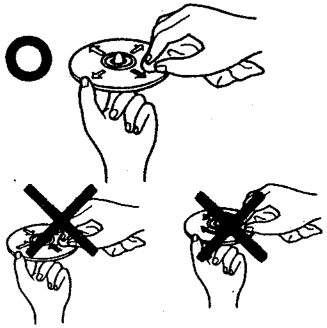
> **NOTE:**
> Some of the cleaning sets on the market have a strong polishing effect which can damage the head.

• Head Demagnetizing

The heads become magnetized after the deck has been used over a long period of time or if the heads are exposed to a magnetic field. This results in noise and reduced treble. In addition, there may be a reduction of the treble range of recorded tapes as well as noise produced on these tapes. When the heads become magnetized, use one of the cassette tape head demagnetizers (erasers) available on the market to demagnetize the heads.

- For details, read the operating instructions of the demagnetizer.

• Disc Cleaning



Dust, fingerprints, or spittle on the disc can cause noise or skipping.
If the disc is dirty or if the player does not work properly, clean the disc as follows:

- Hold the disc as shown in the diagram, with the signal surface facing up (and the labelled side facing down).
- Using a soft cloth, wipe the disc gently from the inside straight towards the edges (as shown by the arrows).

> - Do not wipe from the edges towards the center, or around the disc as you would wipe records.
> - Do not use hard cloths or rub the disc forcefully, since the signal surface is susceptible to scratches.

Never use the following to clean discs:

- Solvents such as benzene or alcohol
- Cleaners containing abrasives
- Record sprays or cleaners
- Anti-static products

15 SPECIFICATIONS

• Receiver (UDRA-65)	
Amplifier	
Practical maximum output:	30 W + 30 W (RMS)
Bass adjustment:	100 Hz ±8 dB
Treble adjustment:	10 kHz ±8 dB
SDB (Super Dynamic Bass):	80 Hz + 8 dB
Terminals:	
AUX:	Input jacks (input sensitivity – 150 mV/47 kohm)
PROCESSOR LOOP:	(input sensitivity – 150 mV/47 kohm)
Headphones jack:	3.5 mm mini size
Mono out:	Output jacks (rated output – 2.5 V)
Surround out:	Output jacks
Tuner	
Receivable frequency range:	FM: 87.50 MHz ~ 108.00 MHz AM: 522 kHz ~ 1611 kHz
Reception sensitivity	FM: 2 µV/75 ohm AM: 20 µV/m
FM stereo separation:	35 dB (1 kHz)
Maximum external dimensions:	270 (W) × 103 (H) × 324 (D) mm (10-5/8" × 4-1/16" × 12-3/4")
Weight:	5.3 kg
Power supply:	AC 230 V, 50 Hz, AC 240 V, 50 Hz (for U.K. model)
Power consumption:	95 W
• CD player (UCD-65)	
Wow & flutter:	Below measurable limits (±0.001% W. peak)
Sampling frequency:	44.1 kHz
Optical source:	Semiconductor
Maximum external dimensions:	270 (W) × 89 (H) × 306 (D) mm (10-5/8" × 3-25/32" × 12-3/64")
Weight:	2.4 kg
• Cassette deck (UDR-65)	
Type:	Horizontal 4-track 2-channel auto reverse stereo cassette deck
Heads:	Hard permalloy recording/playback head × 1 Hard permalloy playback head × 1 Double gap ferrite erasing head × 1
Tape speed:	4.75 cm/s
Included circuit:	Dolby B and C Noise Reduction
Usable tapes:	Normal, chrome and metal
Maximum external dimensions:	270 (W) × 103 (H) × 306 (D) mm (10-5/8" × 4-1/16" × 12-3/64")
Weight:	3.6 kg
• Speakers (USC-65)	
Type:	3-way 3-speaker bass reflex type
Speakers used:	13 cm woofer, 5 cm tweeter and 2.5 cm tweeter
Maximum tolerable input:	60 W
Impedance:	8 ohm
Maximum external dimensions:	192 (W) × 384 (H) × 276 (D) mm (7-9/16" × 15-1/8" × 10-55/64")
Weight:	4.9 kg per speaker
• Remote control unit (RC-164)	
Type:	Infrared pulse
Number of buttons:	32
Maximum external dimensions:	55 (W) × 180 (H) × 18 (D) mm (2-11/64" × 7-3/32" × 45/64")
Weight:	100 g (including batteries)

* Maximum dimensions include controls, jacks, and covers. (W) = width, (H) = height, (D) = depth

- For improvement purposes, specifications and functions are subject to change without advanced notice.

16 TROUBLESHOOTING

1. Check that the connections are proper.
2. Check that you are operating the system according to the instructions in the manual.

Check the following table if the system does not seem to be working properly.
If the problem is not solved after checking these points carefully, the system may be malfunctioning. Switch off the power and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common	Power does not come on when POWER button pressed.	● Power cord not plugged into outlet.	● Plug cord into outlet properly.	5
	No sound produced from speakers.	● VOLUME control set to minimum. ● Headphones are plugged in. ● Speaker cables not connected to speaker terminals.	● Turn VOLUME control clockwise (↻). ● Disconnect headphones. ● Connect speaker cables properly.	6 6 5
	Treble not produced. Orientation of sound field not clear.	● Speaker polarities ((+) and (–)) not matched.	● Connect speaker cables properly.	5
	Source other than the desired one is heard.	● Function selector button not set properly.	● Set to desired function.	6
Deck	Cannot record when REC/REC MUTE button pressed.	● No cassette tape loaded. ● Accidental erasure prevention tabs of cassette broken off.	● Load tape. ● Apply cellophane tape over holes.	17 17
	Sound is interrupted during playback and recording, or treble sound is low.	● Head dirty. ● Tape stretched.	● Clean. ● Replace tape.	27 –
	Wow (fluctuation) is heavy during playback and recording.	● Capstans and pinch rollers dirty.	● Clean.	27
	Buzzing noise heard during playback.	● Noise from TV. ● (Some TVs produce noise.)	● Separate TV from system. ● Turn off TV.	– –
Receiver	Hissing noise heard during FM reception.	● Antenna not pointed in proper direction. ● Signals weak.	● Change direction of antenna. ● Install outdoor antenna.	4 4
	Hissing or scratchy noise heard during AM reception.	● Noise from TV, etc., or interference from other stations.	● Turn off TV. ● Change position of loop antenna. ● Install outdoor antenna.	– – 4
	Hum noise heard during AM reception.	● Signals coming over power cord are modulated by power source frequency.	● Plug in cord in opposite direction. ● Install outdoor antenna.	5 4
CD Player	Disc loaded but total number of tracks not displayed.	● Disc loaded upside-down. ● Disc dirty. ● Non-standard disc loaded.	● Reload disc. ● Clean disc. ● Replace with standard disc.	21 27 21
	Operation not performed when buttons pressed, or playback stops in middle of track.	● Disc loaded upside-down. ● Foreign object in disc holder. ● Disc dirty. ● Disc scratched.	● Reload disc. ● Remove disc and remove foreign object. ● Clean disc. ● Replace with non-scratched disc.	21 21 27 –
	Sound skips.	● Dust, fingerprints, or spittle on disc. ● Disc scratched. ● Player set in shaky, unstable place.	● Clean disc. ● Replace with non-scratched disc. ● Set player in stable place.	27 – –
	Buzzing noise mixed in with CD sound.	● Signals coming over power cord are modulated by power source frequency.	● Plug in cord in opposite direction.	5

Normal operation may not be possible if there is dirt or other substances on the surface of the internal objective lens or sensor.
These parts must be cleaned periodically depending on the place of installation.
For details, contact your store of purchase.

Dew (Condensation) Phenomenon

Dew (water droplets) may form on the lens of the internal optical system or on the disc, or on the rotating parts of the tape deck in situations such as the following:

- Soon after a heater is put on.
- When the set is placed in a steamy or damp room.
- When the set is moved from a cold place to a warm room.

Avoid using ultrasonic humidifiers nearby.
If ultrasonic humidifiers are used nearby, the calcium, etc., included in the water may be scattered into the air, causing white dust to accumulate on the surface of the objective lens or sensor, resulting in improper operation.

When Condensation Forms

The signals of the disc may not be read and this product will not operate properly. To remove the condensation, take out the disc and switch on the power. The condensation will evaporate within 1 hour and the set will operate normally.

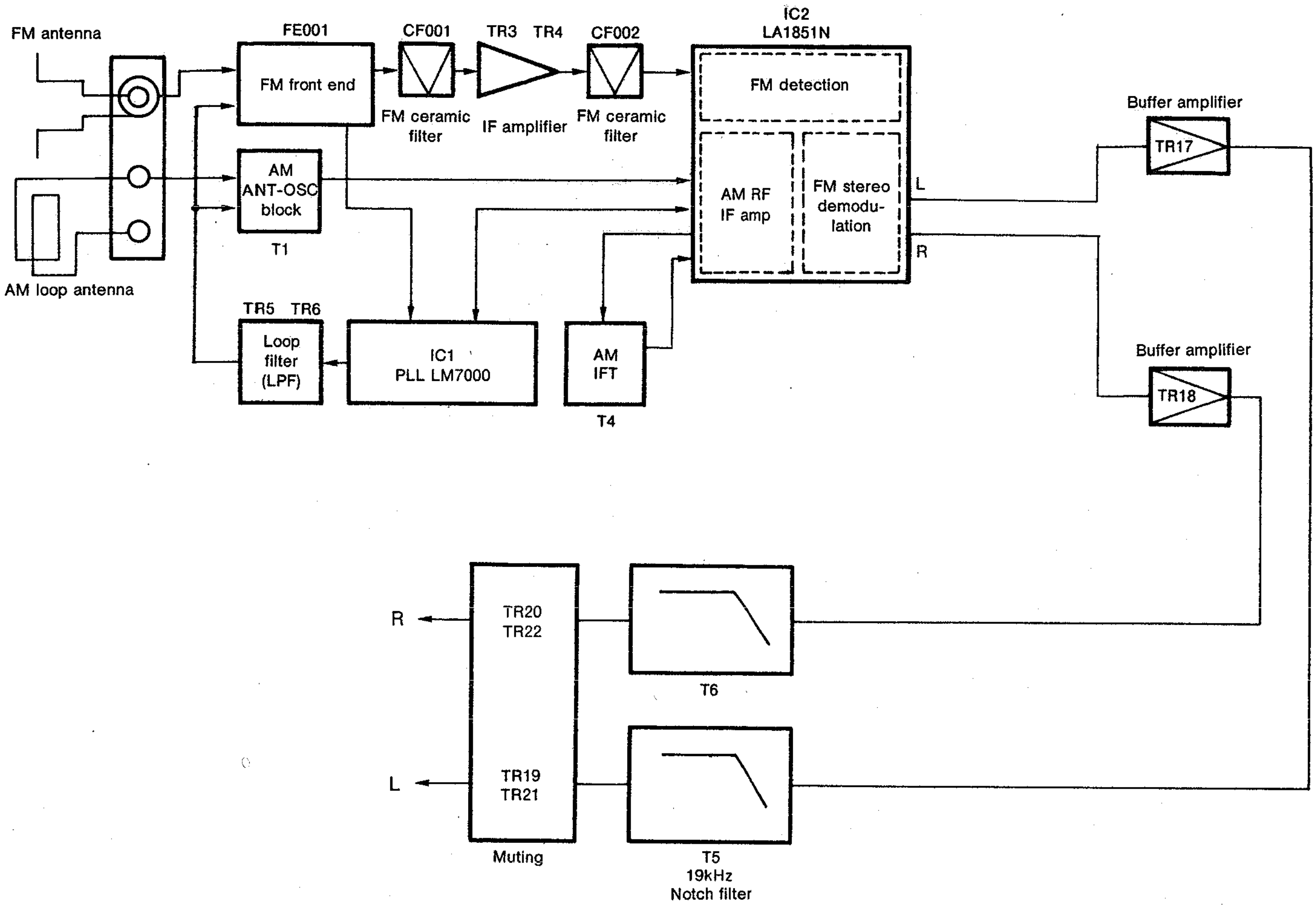
This system consists of precision components using microprocessors. Avoid using it in places where there is much external noise. If used is such places, the system may not operate properly, but this is not a problem with the system. If the system does not operate properly, try performing the desired operation again.

When you bring the cassette deck (UDR-65) or the CD player (UCD-65) in for repair, bring the receiver (UDRA-65) at the same time.

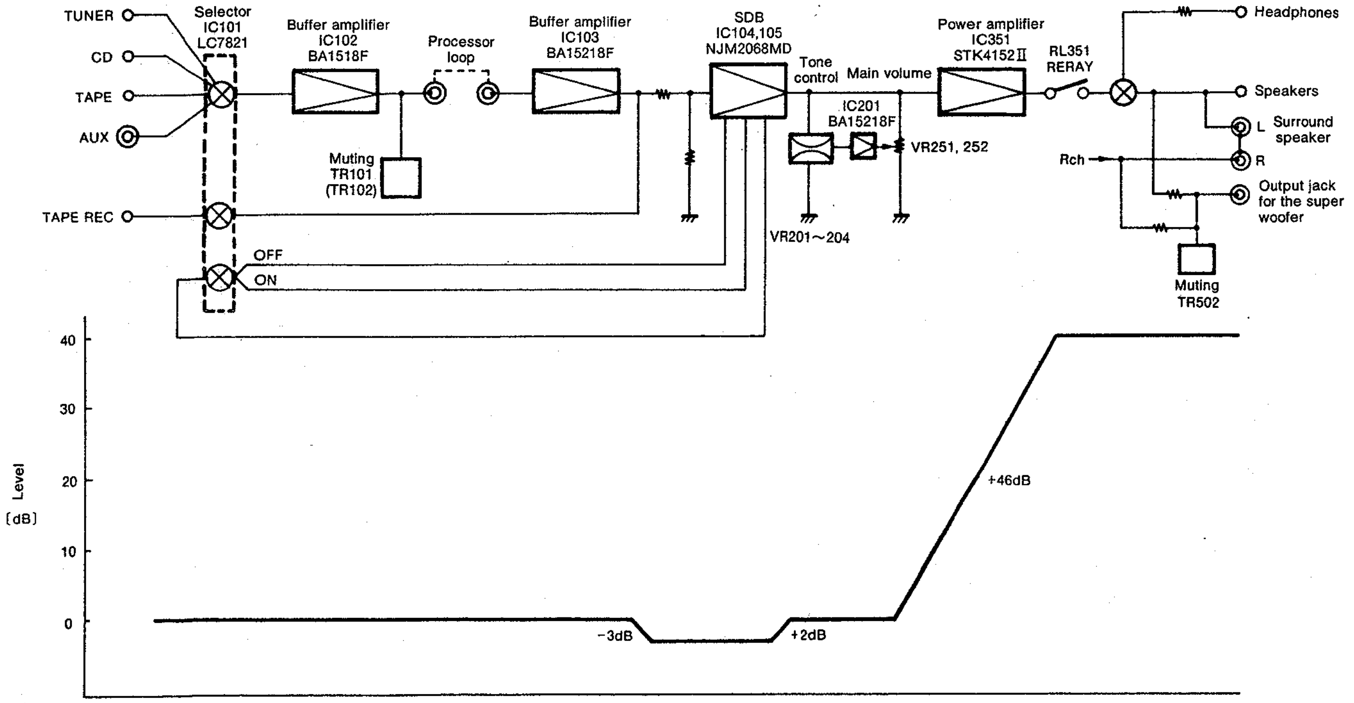
RECEIVER SECTION

BLOCK, LEVEL DIAGRAM

TUNER SECTION


FM antenna
AM loop antenna
FE001
FM front end
CF001
FM ceramic filter
TR3 TR4
IF amplifier
CF002
FM ceramic filter
IC2
LA1851N
FM detection
AM RF
IF amp
FM stereo demodu-lation
L
R
AM
ANT-OSC
block
T1
TR5 TR6
Loop filter (LPF)
IC1
PLL LM7000
AM
IFT
T4
Buffer amplifier
TR17
Buffer amplifier
TR18
R
TR20
TR22
T6
L
TR19
TR21
Muting
T5
19kHz
Notch filter

AMP. SECTION


TUNER
CD
TAPE
AUX
TAPE REC
Selector
IC101
LC7821
OFF
ON
Buffer amplifier
IC102
BA1518F
Muting
TR101
(TR102)
Processor loop
Buffer amplifier
IC103
BA15218F
SDB
IC104,105
NJM2068MD
Tone control
IC201
BA15218F
VR201~204
Main volume
VR251, 252
Power amplifier
IC351
STK4152Ⅱ
RL351
RERAY
Headphones
Speakers
L
Surround speaker
R
Rch
Output jack for the super woofer
Muting
TR502
Level
[dB]
40
30
20
10
0
-3dB
+2dB
+46dB

RECEIVER SECTION

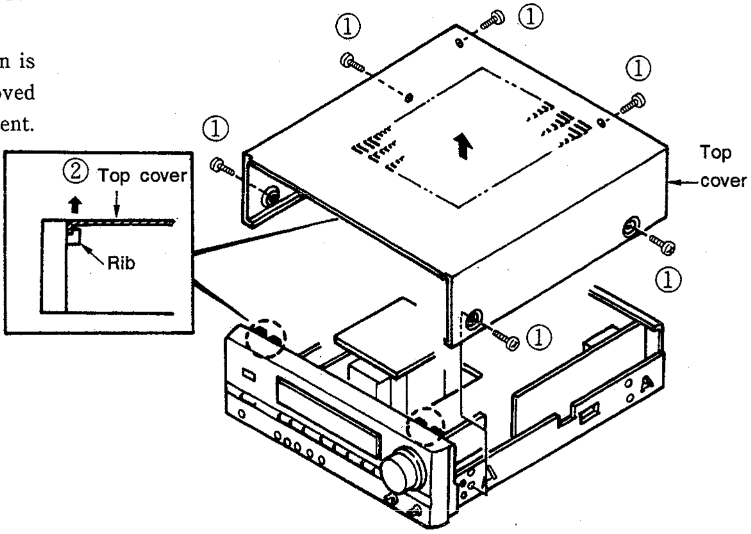
DISASSEMBLY PROCEDURES

(Follow these procedures in reverse order to reassemble.)

1. Removing the Top Cover and the Front Panel

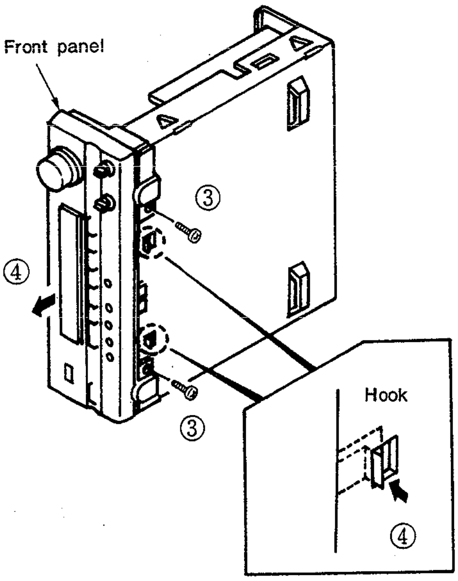
① Remove the six screws that fasten the top cover.

② The top cover is held in the rib of the front panel. Caution is required when taking off the top cover since if it is not removed in the direction of the arrow (vertically), the rib might be bent.


①
①
①
①
①
①
Top cover
② Top cover
Rib

③ Remove the two screws that fasten the front panel.

④ While releasing the hooks of the front panel from the chassis, remove the front panel in the direction of the arrow.


Front panel
③
④
③
Hook
④

2. Removing the Various Units

Main Volume Unit (2U-2554B-3)

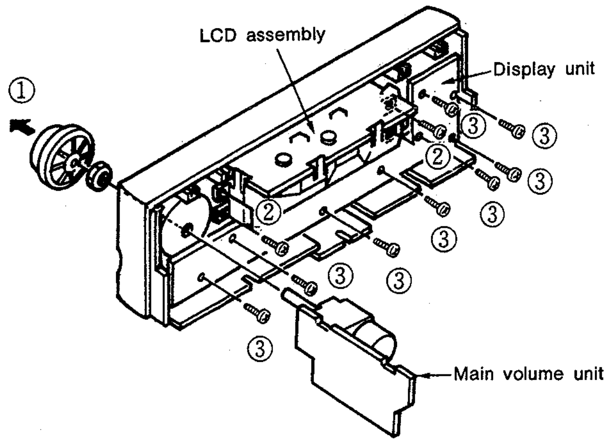
① Remove the main volume control assembly in the direction of the arrow, then remove the nut that is attached to the main volume unit.

② Remove the four screws which fasten the LCD assembly.

Display Unit (2U-2554B-2)

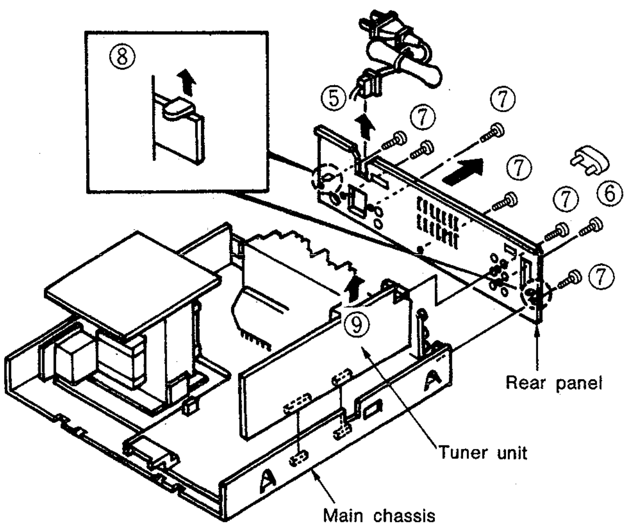
③ Remove the eight screws which fasten the display unit.

④ Disconnect the connectors which are connected to the main unit from the various unit.


LCD assembly
Display unit
①
②
②
③
③
③
③
③
③
③
③
Main volume unit

3. Removing the Rear Panel

⑤ Remove the cord bush from the rear panel.
⑥ Remove the shorting pin.
⑦ Remove the ten screws which fasten the rear panel.
⑧ Remove the rear panel in the direction of the arrow.


⑧
⑤
⑦
⑦
⑦
⑦
⑥
⑦
⑨
Rear panel
Tuner unit
Main chassis

Tuner Unit (2U-2555B)

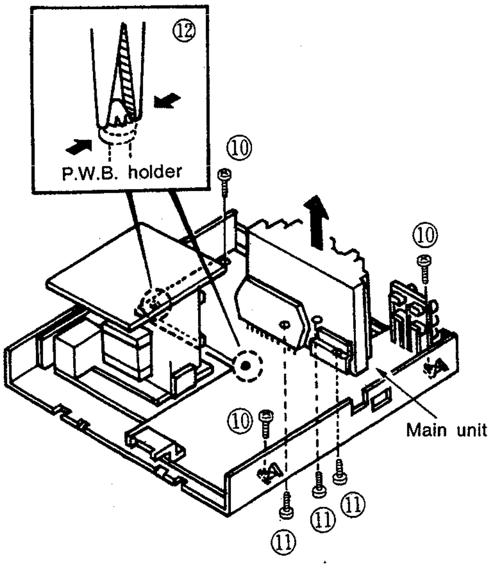
⑨ Pull off the tuner unit from the connector in the direction of the arrow.

Tuner Unit (2U-2555B)

⑨ Pull off the tuner unit from the connector in the direction of the arrow.

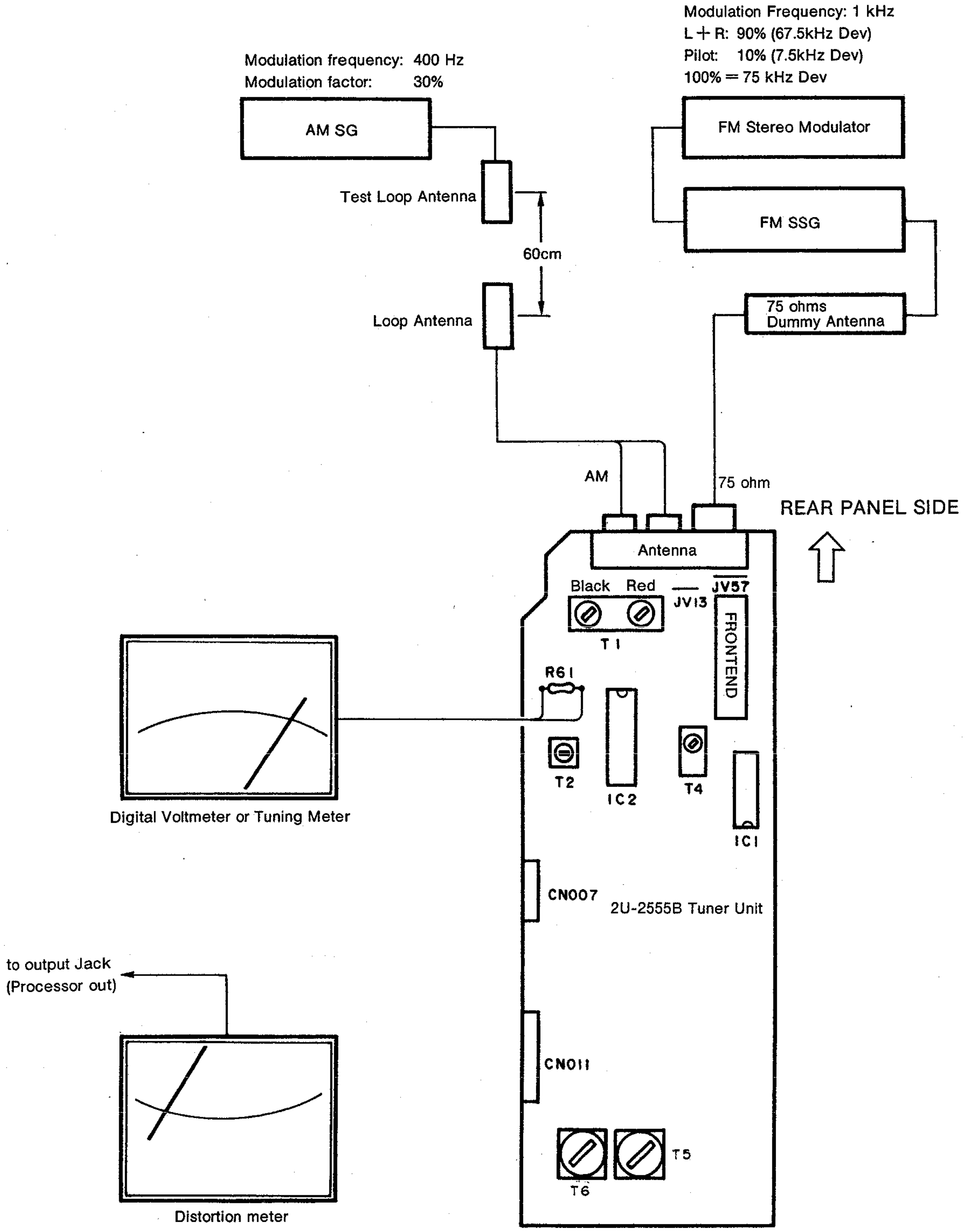
Main Unit (2U-2554B-1)

⑩ Remove the three screws which fasten the main unit.
⑪ Remove the three screws which fasten the radiator and main chassis.
⑫ While holding the two P.W.B. holders with pliers, remove the main unit in the direction of the arrow.


⑫
P.W.B. holder
⑩
⑩
⑩
Main unit
⑪
⑪
⑪

RECEIVER SECTION

ADJUSTMENTS


Modulation frequency: 400 Hz
Modulation factor: 30%
AM SG
Test Loop Antenna
60cm
Loop Antenna
Modulation Frequency: 1 kHz
L + R: 90% (67.5kHz Dev)
Pilot: 10% (7.5kHz Dev)
100% = 75 kHz Dev
FM Stereo Modulator
FM SSG
75 ohms
Dummy Antenna
AM
75 ohm
REAR PANEL SIDE
Antenna
Black
Red
JV13
JV57
FRONTEND
T1
R61
T2
IC2
T4
IC1
CN007
2U-2555B Tuner Unit
CN011
T5
T6
Digital Voltmeter or Tuning Meter
to output Jack
(Processor out)
Distortion meter

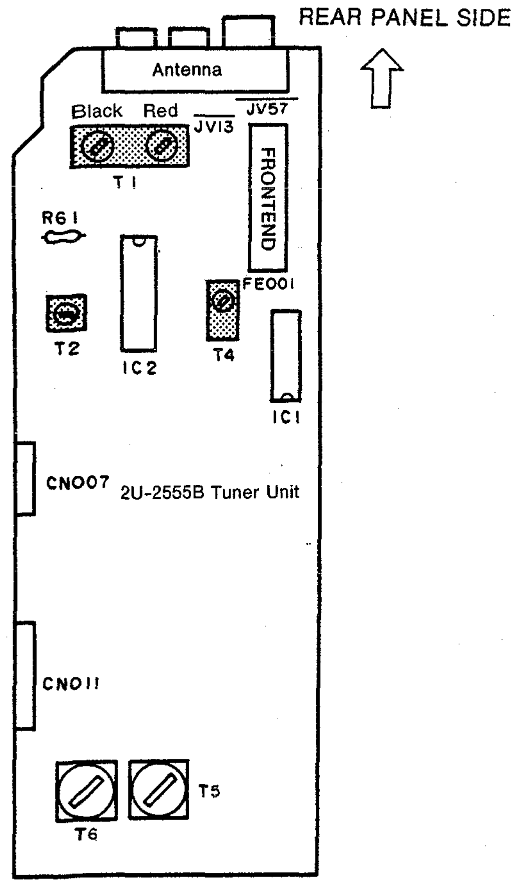
1. FM adjustment (BAND button: FM, MONO/ST button: STEREO)

Step	Adjustment item	Tuning point (Channel setting)	Input					Output		Adjustment location	Setting value	Notes
			Measuring instrument	Frequency	Input level	Modulation	Connection location	Measuring instrument	Connection location			
1	FM DC balance	98.00MHz	FM S.G.	98.00MHz	60dB μ	1kHz 75kHz DEV	FM antenna terminal	Digital volt	R61	T-2	0 ± 50 mV or tuning meter center	Perform with monaural modulation signal

2. AM adjustment (BAND button: AM)

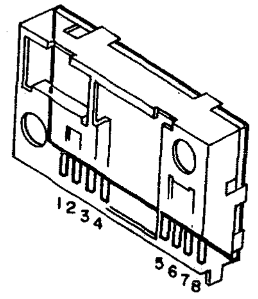
1	IF	Clear frequency (without a broadcast)	AM IF sweep	—	Level at which AGC is not applied	—	AM antenna terminal	Oscilloscope	Output jack (Processor out)	T-4	Waveform maximum and symmetry	
2	Band edge	522kHz	—	—	—	—	—	Digital voltmeter	⊕JV13 ⊖JV57	T-1 Black	1.2V	
		1611kHz								—	Approx. 8.2V	No place to adjust
3	Tracking	603kHz	AM S.G.	603kHz	Level at which AGC is not applied	400Hz 30%	Loop antenna	VTVM	Output terminal (Processor out)	T-1 Red	Maximum output	

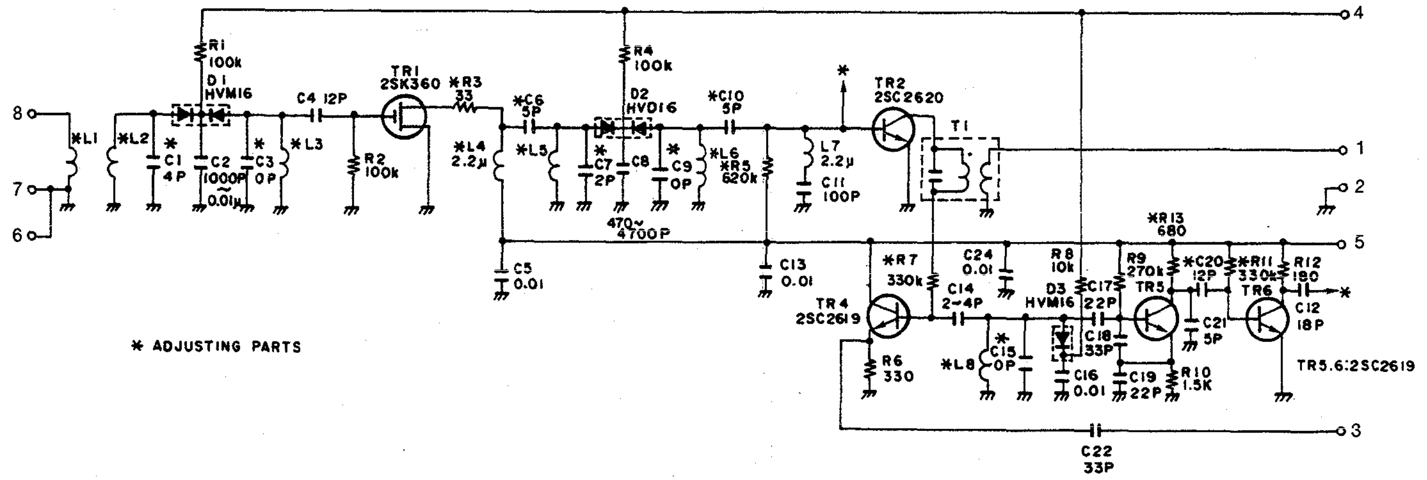
2U-2555B TUNER UNIT ASS'Y (Component Side)


REAR PANEL SIDE
Antenna
Black
Red
JV13
JV57
FRONTEND
T1
R61
FE001
T2
IC2
T4
IC1
CN007
2U-2555B Tuner Unit
CN011
T5
T6

Front End
Part No.: 216 0093 007

No.	Name	No.	Name
1	IF.OUT	5	Vcc
2	GND	6	GND
3	F.OUT	7	GND
4	VT	8	ANT




*R1 100k
D1 HVM16
*L1
*L2
*C1 4P
C2 1000P
0.01μ
*C3 0P
*L3
C4 12P
R2 100k
TR1 2SK360
*R3 33
*L4 2.2μ
*C6 5P
*L5
*C7 2P
C8
*C9 0P
R4 100k
D2 HVD16
*C10 5P
*L6
*R5 620k
470~4700P
L7 2.2μ
C11 100P
TR2 2SC2620
T1
C5 0.01
C13 0.01
TR4 2SC2619
*R7 330k
R6 330
C24 0.01
C14 2~4P
*L8
*C15 0P
R8 10k
D3 HVM16
C17 22P
C18 33P
C16 0.01
R9 270k
C19 22P
*R13 680
*C20 12P
*R11 330k
R12 180
TR5
TR6
C21 5P
C12 18P
R10 1.5K
C22 33P
TR5.6:2SC2619
1
2
3
4
5
6
7
8

* ADJUSTING PARTS

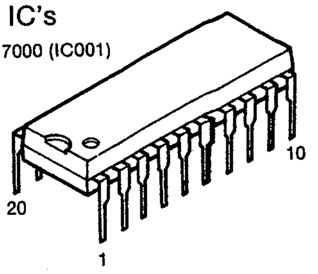
Note		
	1. Terminal Number Refer to Overall Appearance	
	2. Receiving Frequency	87.5~108MHz
	3. Input Impedance	⑧~⑦ 75 ohm
	4. Output Inpedance	300 ohm
	5. Supply Voltage	12V
	6. Tuning Voltage	1.2~8.2V

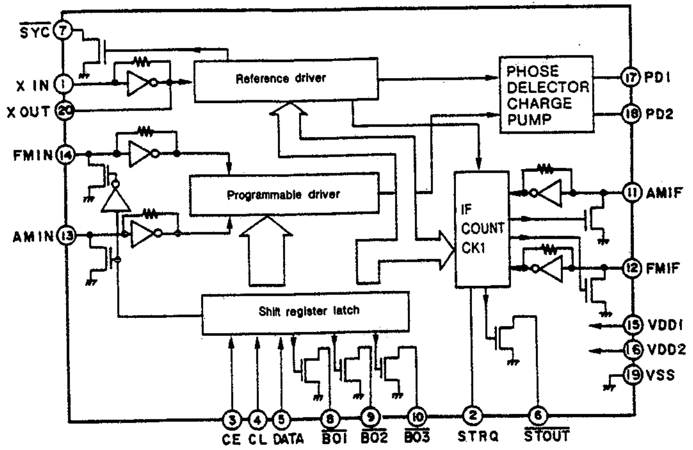
RECEIVER SECTION

SEMICONDUCTORS

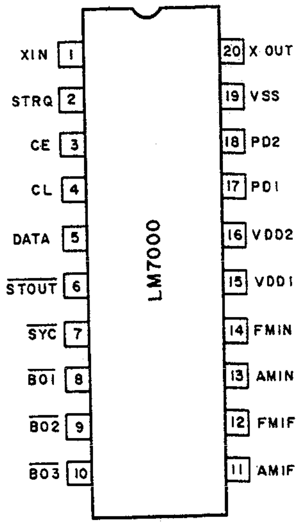
IC's

.M7000 (IC001)





$\overline{SYC}$ 7
X IN 1
X OUT 20
FMIN 14
AMIN 13
Reference driver
Programmable driver
Shift register latch
PHOSE DELECTOR CHARGE PUMP
IF COUNT CK1
17 PD1
18 PD2
11 AMIF
12 FMIF
15 VDD1
16 VDD2
19 VSS
3 4 5 8 9 10 2 6
CE CL DATA $\overline{B01}$ $\overline{B02}$ $\overline{B03}$ STRQ $\overline{STOUT}$

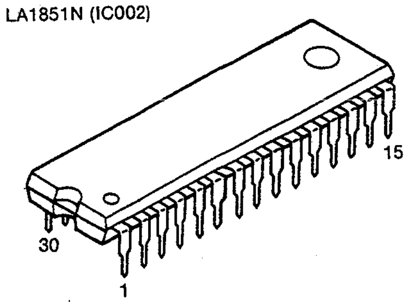


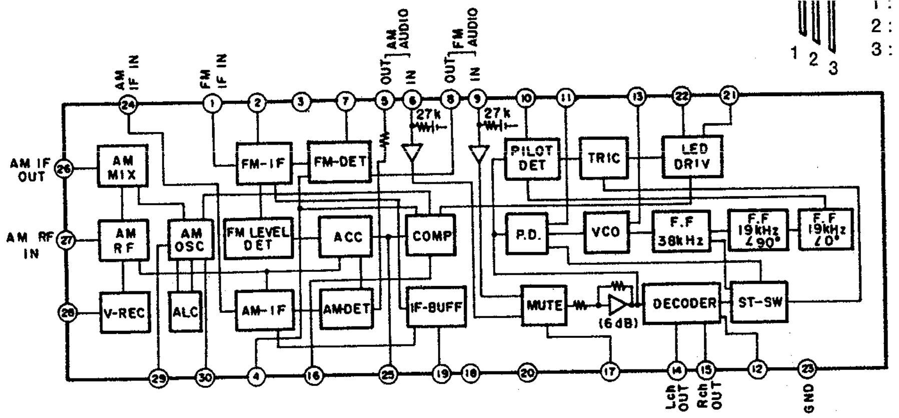
LM7000
XIN 1
STRQ 2
CE 3
CL 4
DATA 5
$\overline{STOUT}$ 6
$\overline{SYC}$ 7
$\overline{B01}$ 8
$\overline{B02}$ 9
$\overline{B03}$ 10
20 X OUT
19 VSS
18 PD2
17 PD1
16 VDD2
15 VDD1
14 FMIN
13 AMIN
12 FMIF
11 AMIF

Pin Description

$\overline{SYC}$	: Clock (400 kHz) for the controller
XIN, XOUT	: X'tal oscillator (7.2 MHz) with built-in feedback resistor
FM IN, AM IN	: Local oscillator signal input
CE, CL, DATA	: Data input
$\overline{B01}$, $\overline{B02}$, $\overline{B03}$	: Band data output. $\overline{B01}$ can be set as the time base output (8 Hz).
STRQ	: IF counter request input
$\overline{STOUT}$	: Auto research stop signal output
VDD1, VDD2, VSS	: Power supply (VDD2 is a back-up power supply)
AMIF, FMIF	: IF signal input
PD1, PD2	: Charge pump output

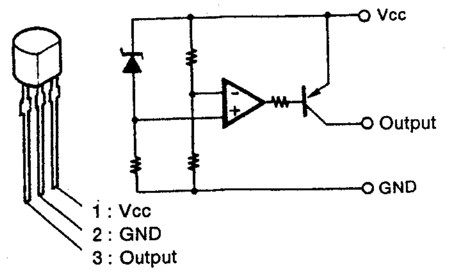
LA1851N (IC002)





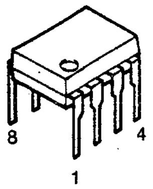
AM IF IN
FM IF IN
AM AUDIO OUT
FM AUDIO OUT
AM IF OUT 26
AM RF IN 27
28
AM MIX
AM RF
AM OSC
V-REC
ALC
FM-IF
FM-DET
FM LEVEL DET
ACC
COMP
AM-IF
AMDET
IF-BUFF
27k
PILOT DET
TRIC
LED DRIV
P.D.
VCO
F.F 38kHz
F.F 19kHz ∠90°
F.F 19kHz ∠0°
MUTE
(6dB)
DECODER
ST-SW
24 1 2 3 7 5 6 8 9 10 11 13 22 21
29 30 4 16 25 19 18 20 17 14 15 12 23
Lch OUT
Rch OUT
GND

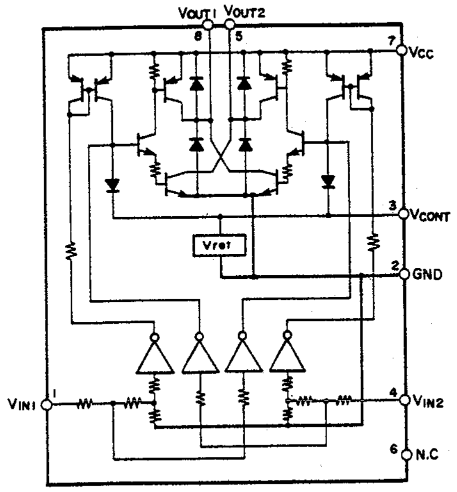
PST529C (IC701)



Vcc
Output
GND
1 : Vcc
2 : GND
3 : Output

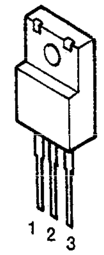
LB1639 (IC251)





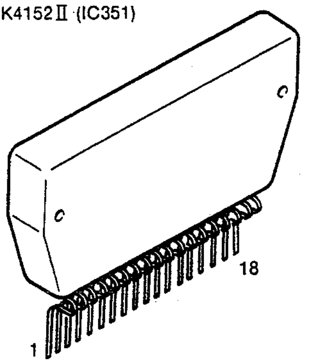
VOUT1 VOUT2
8 5
7 Vcc
3 VCONT
2 GND
Vref
VIN1 1
4 VIN2
6 N.C

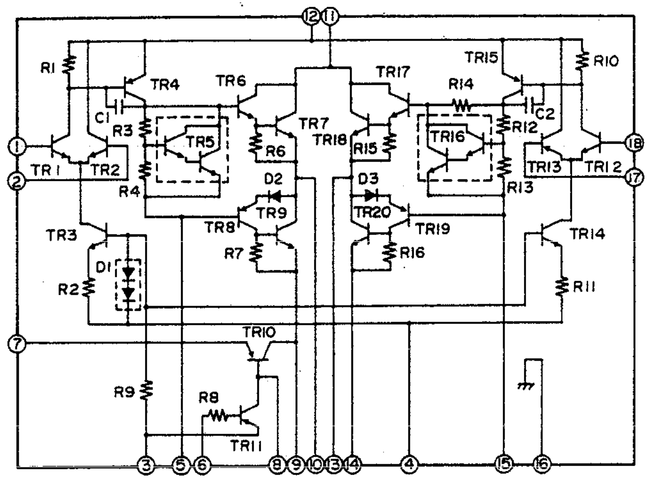
NJM7806FA (S) (IC688)
NJM78M12FA (S) (IC605)



1 2 3
1 : Input
2 : GND
3 : Output

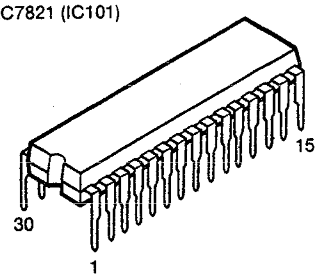
STK4152Ⅱ (IC351)

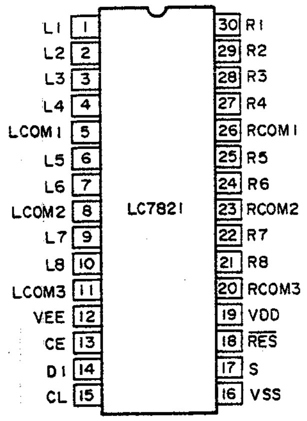




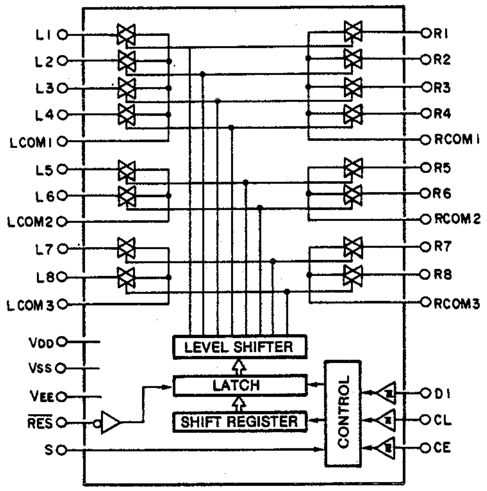
12 11
R1 TR4 TR6 TR17 TR15 R10
C1 R3 TR5 R6 TR7 TR18 R15 TR16 R14 C2 R12
1 TR1 TR2 R4 D2 D3 R13 TR13 TR12 18 17
2 TR3 TR8 TR9 TR20 TR19 TR14
R7 R16 R11
D1 R2
7 TR10
R9 R8 TR11
3 5 6 8 9 10 13 14 4 15 16

LC7821 (IC101)



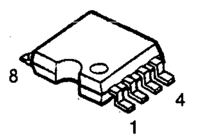


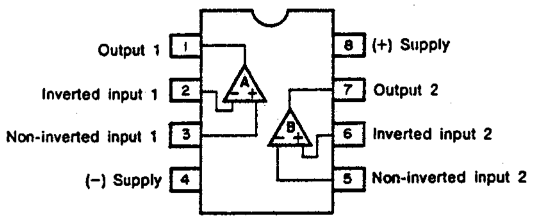
LC7821
L1 1
L2 2
L3 3
L4 4
LCOM1 5
L5 6
L6 7
LCOM2 8
L7 9
L8 10
LCOM3 11
VEE 12
CE 13
D1 14
CL 15
30 R1
29 R2
28 R3
27 R4
26 RCOM1
25 R5
24 R6
23 RCOM2
22 R7
21 R8
20 RCOM3
19 VDD
18 $\overline{RES}$
17 S
16 VSS



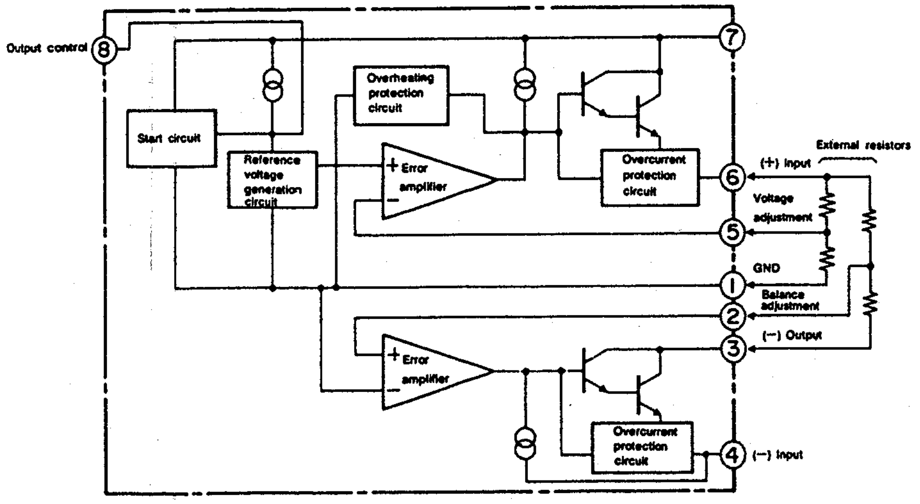
L1
L2
L3
L4
LCOM1
L5
L6
LCOM2
L7
L8
LCOM3
VDD
VSS
VEE
$\overline{RES}$
S
R1
R2
R3
R4
RCOM1
R5
R6
RCOM2
R7
R8
RCOM3
LEVEL SHIFTER
LATCH
SHIFT REGISTER
CONTROL
D1
CL
CE

BA15218F (IC102, 103, 201)
NJM2068MD (IC104, 105)



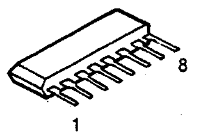


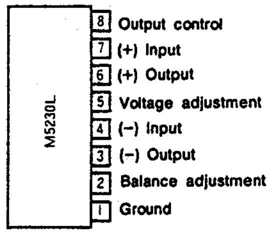
Output 1 1
Inverted input 1 2
Non-inverted input 1 3
(−) Supply 4
8 (+) Supply
7 Output 2
6 Inverted input 2
5 Non-inverted input 2
A
B



Output control 8
7
Start circuit
Overheating protection circuit
Reference voltage generation circuit
Error amplifier
Overcurrent protection circuit
External resistors
6 (+) Input
Voltage adjustment
5
1 GND
Balance adjustment
2
3 (−) Output
Error amplifier
Overcurrent protection circuit
4 (−) Input

M5230L (IC651)

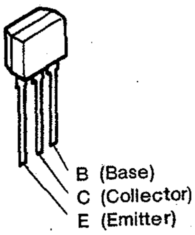




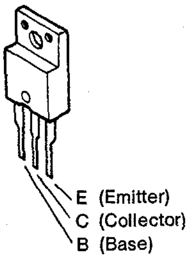
M5230L
8 Output control
7 (+) Input
6 (+) Output
5 Voltage adjustment
4 (−) Input
3 (−) Output
2 Balance adjustment
1 Ground

Transistors

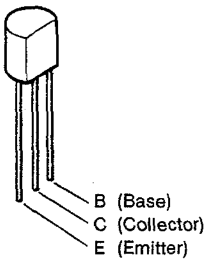
2SC1740S (S)


B (Base)
C (Collector)
E (Emitter)

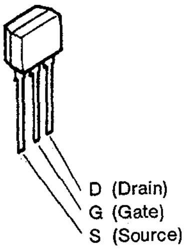
2SA1488 (Y)/(G)
2SC3851 (Y)/(G)
2SD1913


E (Emitter)
C (Collector)
B (Base)

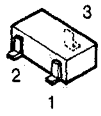
2SC2410S


B (Base)
C (Collector)
E (Emitter)

2SK381 (C)

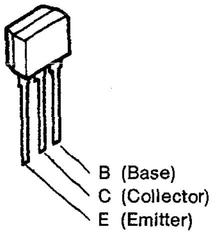

D (Drain)
G (Gate)
S (Source)

2SA1037K (S/R)
2SC2412K (S)

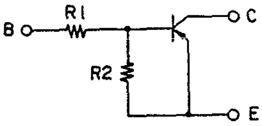


1 : Emitter
2 : Base
3 : Collector

DTA144ES PNP Type
DTC114ES } NPN Type
DTC144ES

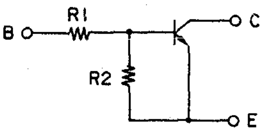

B (Base)
C (Collector)
E (Emitter)

PNP Type
DTA ES Series



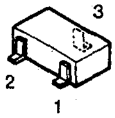
	R1	R2
DTA144ES	47k ohm	47k ohm

NPN Type
DTC ES Series



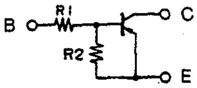
	R1	R2
DTC114ES	47k ohm	47k ohm
DTC144ES	10k ohm	10k ohm

DTA114EK } PNP Type
DTA144EK
DTC114EK } NPN Type
DTC144EK
DTC314TK



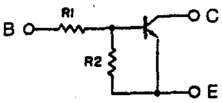
1 : Emitter
2 : Base
3 : Collector

PNP Type
DTA EK Series



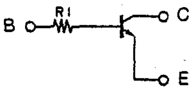
	R1	R2
DTA114EK	10k ohm	10k ohm
DTA144EK	47k ohm	47k ohm

NPN Type
DTC EK Series



	R1	R2
DTC114EK	10k ohm	10k ohm
DTC144EK	47k ohm	47k ohm

NPN Type
DTC TK Series

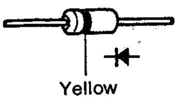


	R1
DTC314TK	10k ohm

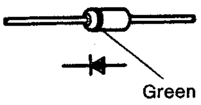
RECEIVER SECTION

● Diodes

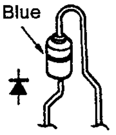
1SS254



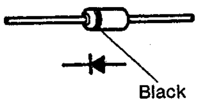
1SS198



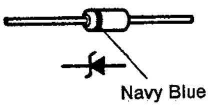
1SR35-200A



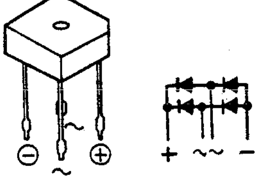
1SS252



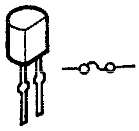
HZS4A-1
HZS6B-1
HZS12B-1
HZS16-1



S4VB20F
(D501)



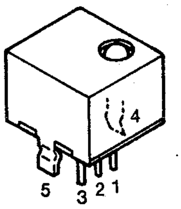
● IC Protector



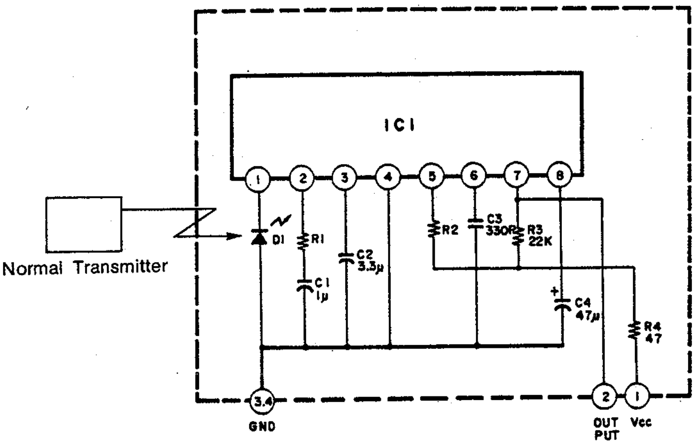
ICP-N15
(IC501)

● Infrared Remote Control Sensor

SBX1610-52 (IC703)
Part No.: 499 0150 008



1. Vcc
2. Output
3. GND
4. Case fin
5. Case fin

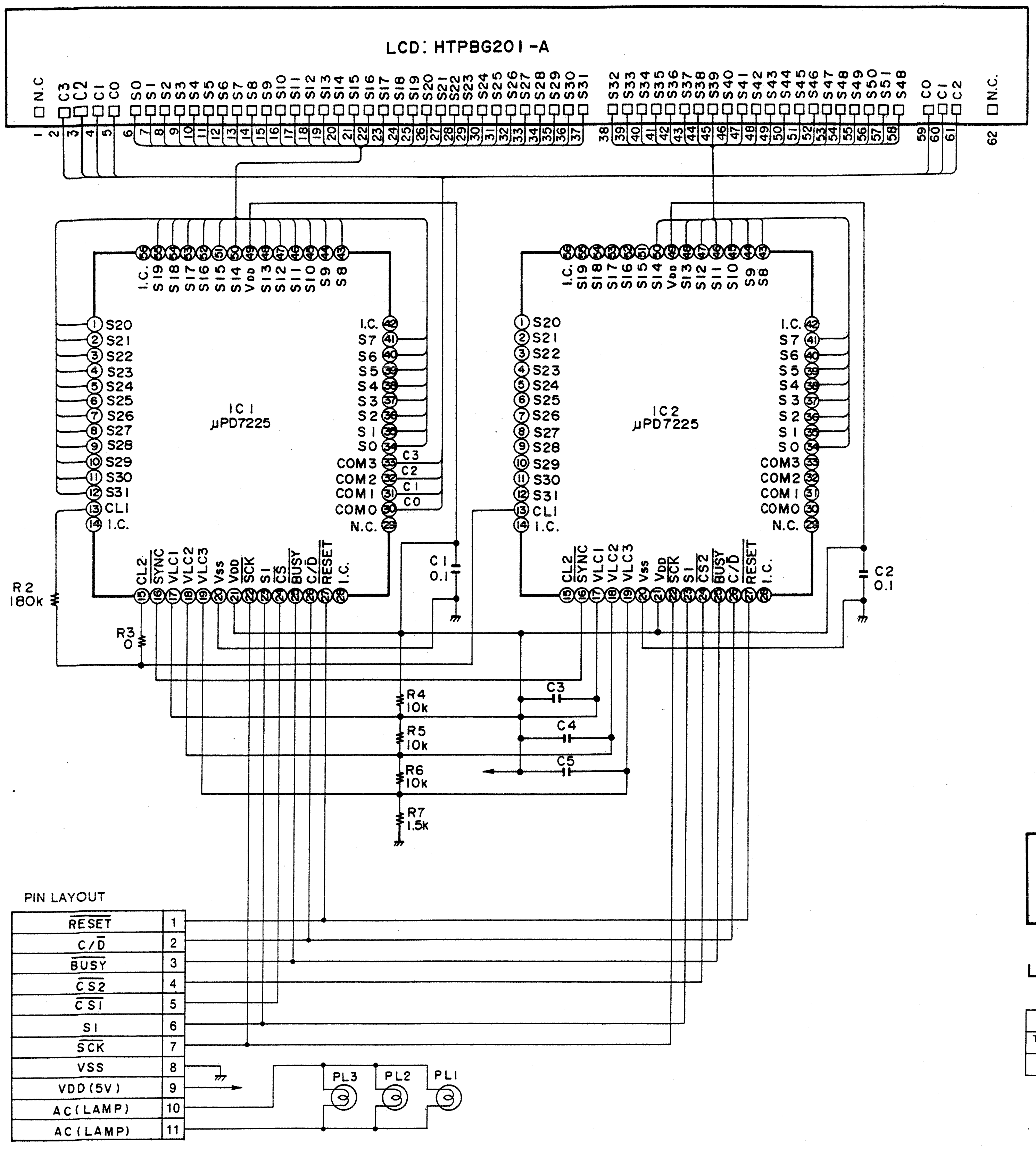

Normal Transmitter
IC1
1
2
3
4
5
6
7
8
D1
R1
C1 1µ
C2 3.3µ
R2
C3 330P
R3 22K
C4 47µ
R4 47
3.4
GND
2
OUT PUT
1
Vcc

∗ This unit is wholly used in the receiver section.

IC1:	CX20106A chip
D1:	PIN photodiode chip
C1,C2,C4:	Aluminum electrolytic capacitor
C3:	Ceramic SL characteristics, ±5%
R1:	Carbon film resistor for gain adjustment
R2:	Carbon film resistor for fo adjustment (Use±1%)
R (other than above):	±5%

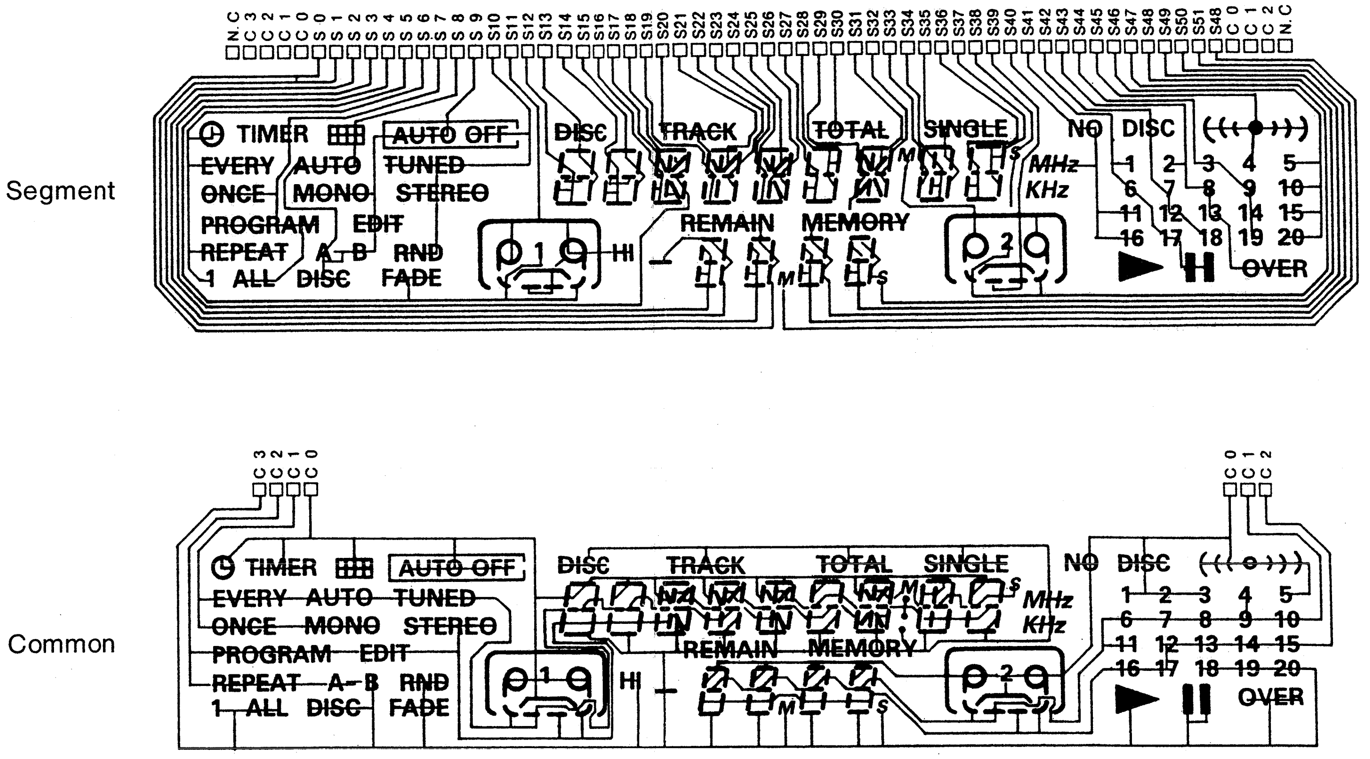
● LCD Ass'y (Part No.: 393 6001 002)

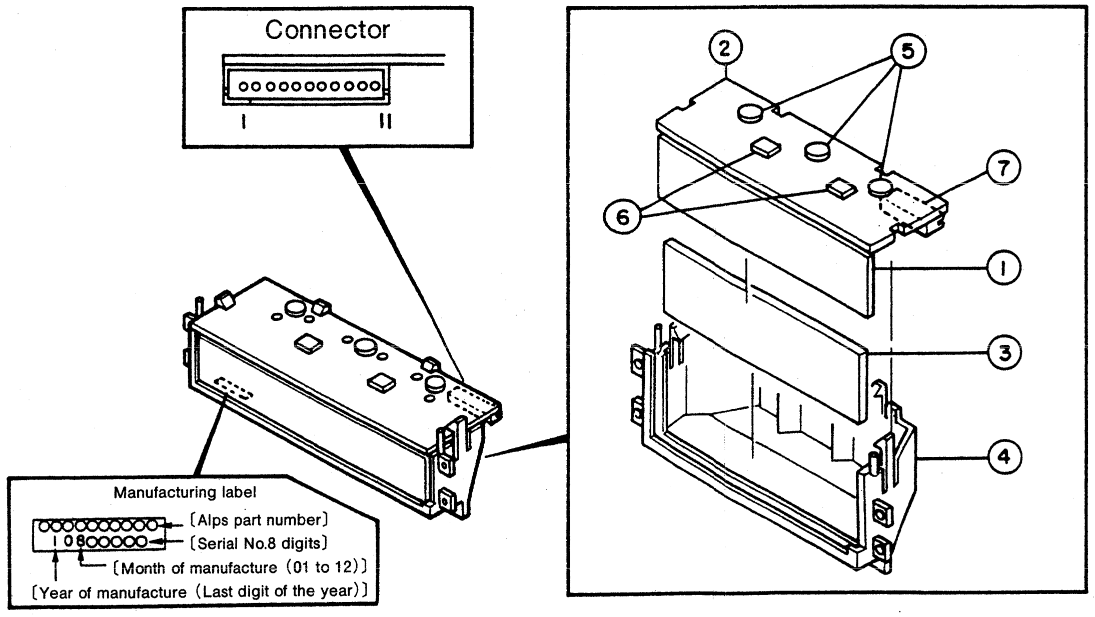
Schematic Diagraom


LCD: HTPBG201-A
IC1
μPD7225
IC2
μPD7225
R2 180k
R3 0
R4 10k
R5 10k
R6 10k
R7 1.5k
C1 0.1
C2 0.1
C3
C4
C5
PIN LAYOUT
RESET 1
C/D 2
BUSY 3
CS2 4
CS1 5
SI 6
SCK 7
VSS 8
VDD (5V) 9
AC (LAMP) 10
AC (LAMP) 11
PL3
PL2
PL1

Lamp
Rated voltage: 5.0V
Design current: 115mA
Voltage used: 4.5V AC

Wiring Diagram


Segment
Common
TIMER
AUTO OFF
EVERY
AUTO
TUNED
ONCE
MONO
STEREO
PROGRAM
EDIT
REPEAT
A-B
RND
1 ALL
DISC
FADE
TRACK
TOTAL
SINGLE
NO
REMAIN
MEMORY
MHz
KHz
HI
OVER


Connector
I
II
②
⑤
⑦
⑥
①
③
④
Manufacturing label
108

[Alps part number]
[Serial No.8 digits]
[Month of manufacture (01 to 12)]
[Year of manufacture (Last digit of the year)]

Connections

PIN No.	SYMBOL
1	RESET
2	C/D
3	BUSY
4	CS2
5	CS1
6	SI
7	SCK
8	VSS
9	VDD (5V)
10	AC (LAMP)
11	AC (LAMP)

Lamp characteristics
(Part number: 393 0106 000)

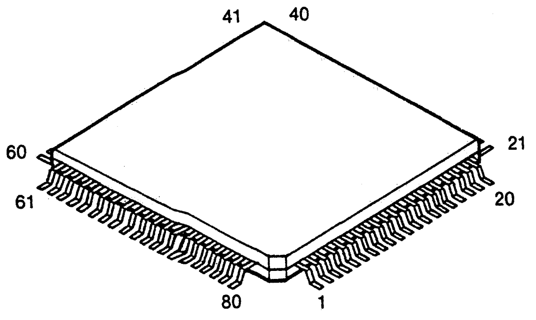
Initial Characteristics						
Test voltage (V)	Current (mA)	Power (W)	Beam Lm	Efficiency	Rated service life	Filament
5 V	115 mA	0.6 W	(2.5 Lm)	4.2 Lm/W	10,000 h	C-2R

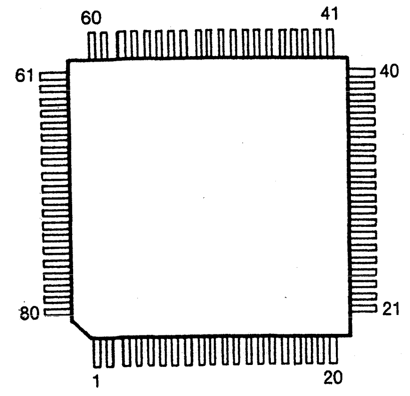
Parts List

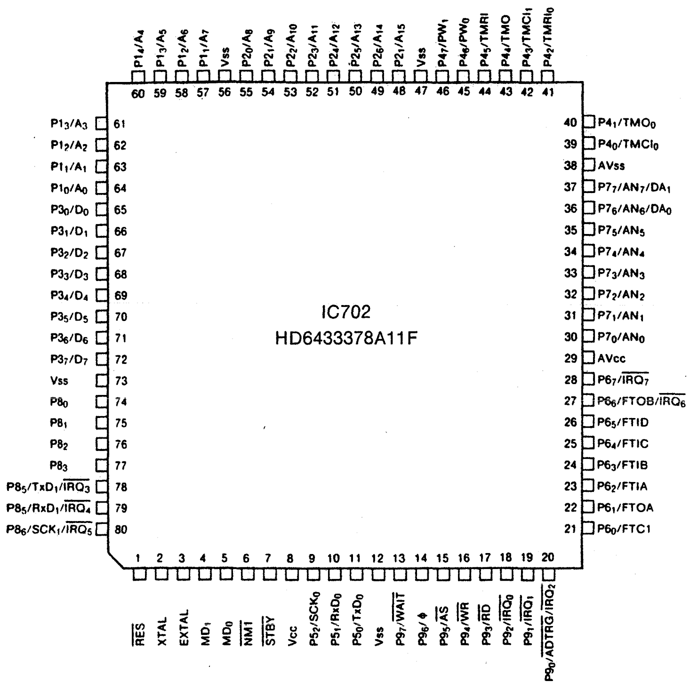
Part No.	Part Name	Quantity	Item
①	LCD	1	5V, 1/4D, 1/3B
②	PWB	1	CEM-3 board thickness 1.6t
③	Diffusion board	1	Acrylic board; board thickness 2.0t
④	Lamp housing	1	Polycarbonate
⑤	Lamp	3	Rated at 5 V, 115 mA. Voltage used: 4.5 V AC.
⑥	LSI	2	NEC product μ PD7225GB
⑦	Connector	1	Nippon Atchaku Tanshi product S128-PH-K-S
—	Resistors	6	R2 = 180k, R3 = 0, R4, R5, R6 = 10k, R7 = 1.5k
—	Capacitors	2	C1, C2 = 0.1 μ F

MICROPROCESSOR DOCUMENTATION

HD6433378A11F Part No.: 262 1821 103


41
40
60
21
61
20
80
1


60
41
61
40
80
21
1
20


IC702
HD6433378A11F
P1₄/A₄ 60
P1₃/A₅ 59
P1₂/A₆ 58
P1₁/A₇ 57
Vss 56
P2₀/A₈ 55
P2₁/A₉ 54
P2₂/A₁₀ 53
P2₃/A₁₁ 52
P2₄/A₁₂ 51
P2₅/A₁₃ 50
P2₆/A₁₄ 49
P2₁/A₁₅ 48
Vss 47
P4₇/PW₁ 46
P4₆/PW₀ 45
P4₅/TMRI 44
P4₄/TMO 43
P4₃/TMCI₁ 42
P4₂/TMRI₀ 41
P1₃/A₃ 61
P1₂/A₂ 62
P1₁/A₁ 63
P1₀/A₀ 64
P3₀/D₀ 65
P3₁/D₁ 66
P3₂/D₂ 67
P3₃/D₃ 68
P3₄/D₄ 69
P3₅/D₅ 70
P3₆/D₆ 71
P3₇/D₇ 72
Vss 73
P8₀ 74
P8₁ 75
P8₂ 76
P8₃ 77
P8₅/TxD₁/IRQ₃ 78
P8₅/RxD₁/IRQ₄ 79
P8₆/SCK₁/IRQ₅ 80
40 P4₁/TMO₀
39 P4₀/TMCI₀
38 AVss
37 P7₇/AN₇/DA₁
36 P7₆/AN₆/DA₀
35 P7₅/AN₅
34 P7₄/AN₄
33 P7₃/AN₃
32 P7₂/AN₂
31 P7₁/AN₁
30 P7₀/AN₀
29 AVcc
28 P6₇/IRQ₇
27 P6₆/FTOB/IRQ₆
26 P6₅/FTID
25 P6₄/FTIC
24 P6₃/FTIB
23 P6₂/FTIA
22 P6₁/FTOA
21 P6₀/FTC1
1 RES
2 XTAL
3 EXTAL
4 MD₁
5 MD₀
6 NMI
7 STBY
8 Vcc
9 P5₂/SCK₀
10 P5₁/RxD₀
11 P5₀/TxD₀
12 Vss
13 P9₇/WAIT
14 P9₆/ϕ
15 P9₅/AS
16 P9₄/WR
17 P9₃/RD
18 P9₂/IRQ₀
19 P9₁/IRQ₁
20 P9₀/ADTRG/IRQ₂

1. Overview

The functions of this microcomputer are made up of the following four pillars.

a. Tuner Functions

- These functions perform the required control for the reception of FM and AM broadcasts.

b. Auto Functions

- Positioned at the heart of the system stereo, the auto functions perform serial communications with other components (such as the deck, CD, and amplifier) to provide overall control.
- These functions decode the signals from the remote control and send them to each component of the system.

c. Timer Functions

- Counts the clock of the 24-hour display.
- Provides 3 types of timer operation: Everyday, once and sleep.

d. CD Display Function

- Provides the CD operation displays.

Note 1: When buttons "STANDBY" and "MEMORY" of the wiring diagram are pressed simultaneously and the power cord is inserted into the power outlet, the frequencies used for the tracking adjustment will automatically be registered in the preset memory as indicated below. Use this information for tuning and other procedures.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
AM (kHz)	522	603	999	1,098	1,404	1,611	522	522	522	522
	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
FM (MHz)	87.50	89.00	98.00	100.10	108.00	87.50	87.50	87.50	87.50	87.50
	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30
AM (kHz)	522	522	522	522	522	522	522	522	522	522

∗P7 through P10 and P21 through P30 are AM 522 kHz, and P16 through P20 are FM 87.50 MHz.

Note 2: Depressing both the MEMORY and BAND buttons while plugging the power cord into the power outlet serves to initialize the current time setting and the contents of the timer and preset memory.

2. Receiving Band Table

Band	Receiving frequency	Local oscillator frequency	IF frequency	Frequency division ratio	Comparison frequency	Step frequency	Other
FM	87.50～108.00 MHz	98.20～118.70 MHz	10.7 MHz	1/2	25 kHz	100 kHz	STEREO
AM	522～1611 kHz	972～2061 kHz	450 kHz	—	9 kHz	9 kHz	

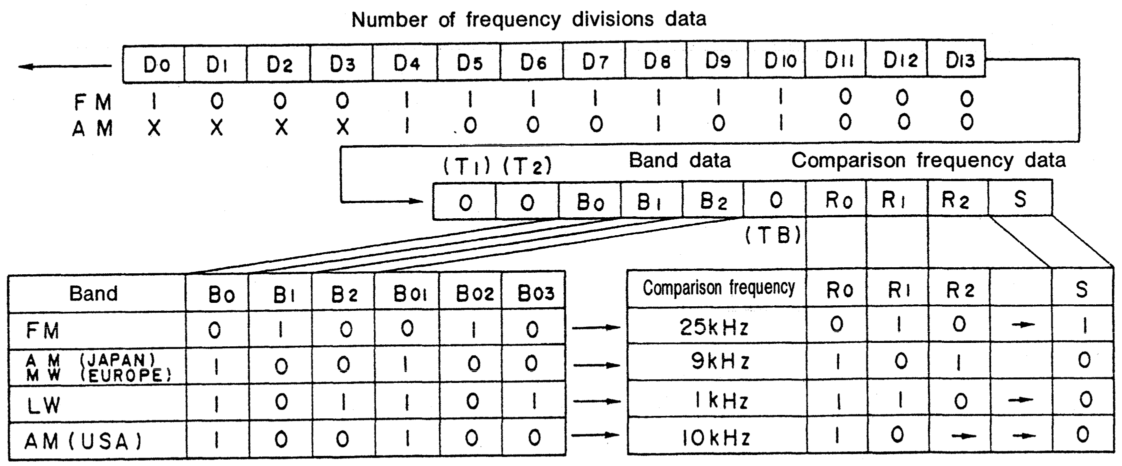
3. Signals sent to the LM7000 Programmable Divider

a. Signals to the programmable divider are sent from 3 sources: CE OUT, CLOCK OUT, and DATA OUT.

b. The programmable divider takes in DATA at CLOCK ⨼, when CE equals 1.

c. The data is a 24-bit serial signal which is taken in to the programmable divider from the LSB.
(At the AM setting, D_0 through D_3 are ignored, so that D_4 becomes the LSB.)

d. The data is made up of the number of frequency divisions data, the band data, and the comparison frequency data. (See diagram below.)

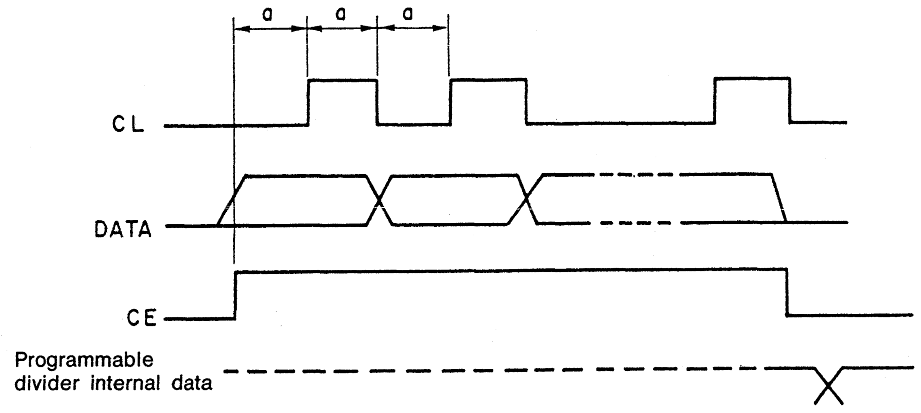

Number of frequency divisions data
(T1) (T2)
Band data
Comparison frequency data
0 0 B0 B1 B2 0 R0 R1 R2 S
(TB)

	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
FM	1	0	0	0	1	1	1	1	1	1	1	0	0	0
AM	X	X	X	X	1	0	0	0	1	0	1	0	0	0

Band	B0	B1	B2	B01	B02	B03
FM	0	1	0	0	1	0
AM (JAPAN) MW (EUROPE)	1	0	0	1	0	0
LW	1	0	1	1	0	1
AM (USA)	1	0	0	1	0	0

Comparison frequency	R0	R1	R2		S
25kHz	0	1	0	→	1
9kHz	1	0	1		0
1kHz	1	1	0	→	0
10kHz	1	0	→	→	0

e. Timing for sending
a = 2.5 μsec


a
a
a
CL
DATA
CE
Programmable
divider internal data

Pin Description

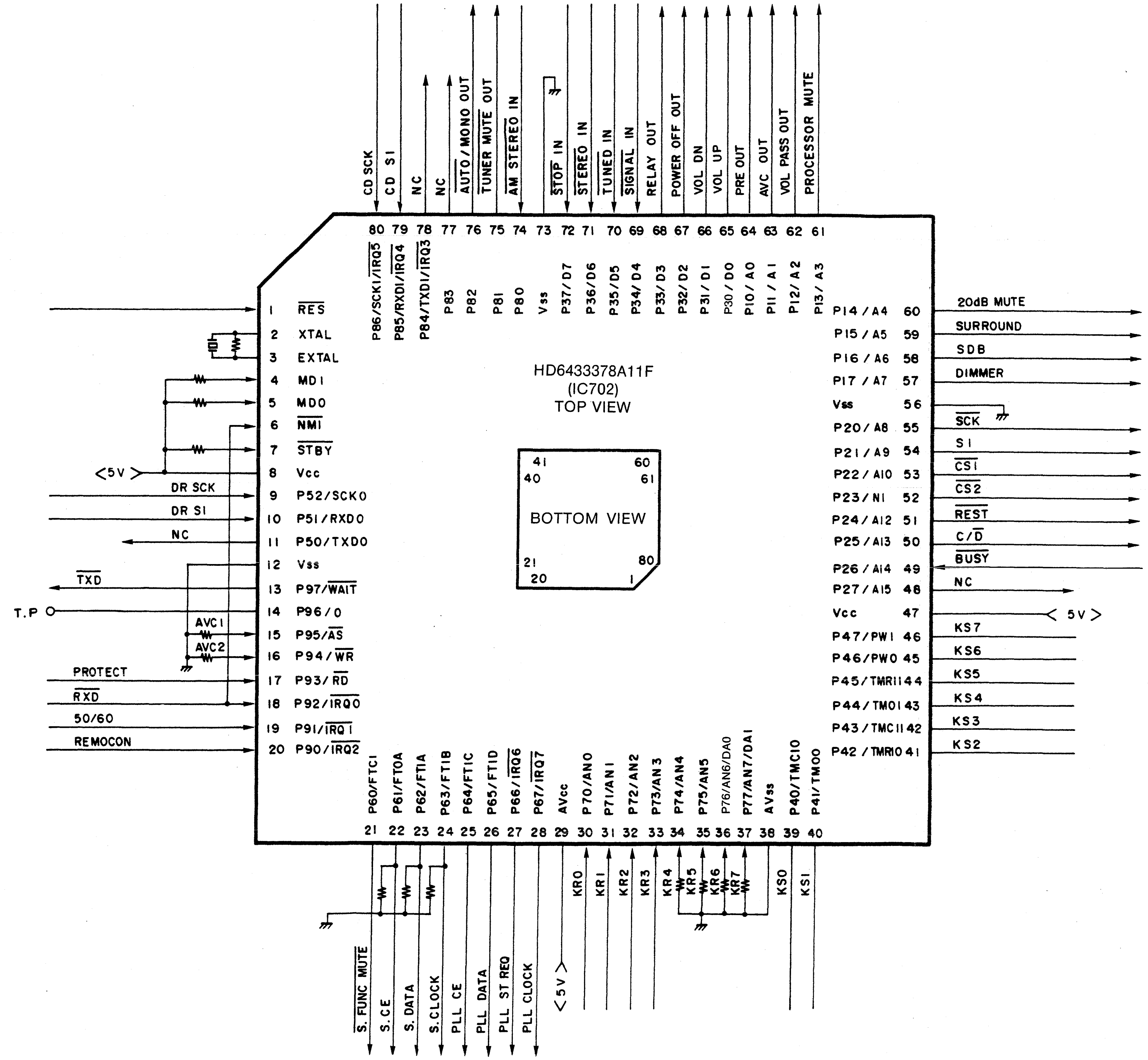
Pin No.	Port Name	Function Name	N	A	Function
1	$\overline{\text{RES}}$	CPU. RESET	H	L	Hard reset
2	XTAL	X'TAL	—	—	20 MHz (Oscillator connection)
3	EXTAL	X'TAL	—	—	20 MHz (Oscillator connection)
4	MD1	MODE1	H	H	VCC connection
5	MD0	MODE0	H	H	VCC connection
6	$\overline{\text{NMI}}$	SERIAL SIG IN	H	L	Serial communications input
7	$\overline{\text{STBY}}$	STANDBY	H	L	HARD STANDBY input
8	VCC	VCC	—	—	VCC connection
9	P52/SCK0	DR SCK IN	L	H	NC
10	P51/RXD0	DR SI IN	L	H	UDR display CLOCK input
11	P50/TXD0	—	—	—	UDR display input
12	VSS	VSS	—	—	N.C. DATA
13	P97/$\overline{\text{WAIT}}$	SERIAL SIG OUT	H	L	Serial communications output
14	P96/0	0/2 OUT	L	H	System clock out (10 MHz)
15	P95	AVC CHECK2 IN	L	H	AVC control input 2
16	P94	AVC CHECK1 IN	L	H	AVC control input 1
17	P93	PROTECT IN	L	H	Amp. protect input
18	P92/$\overline{\text{IRQ0}}$	SERIAL SIG IN	L	H	Serial communications input
19	P91/$\overline{\text{IRQ1}}$	50/60	H	L	50/60 Hz input (clock)
20	P90/ADTRG/IRQ2	REMOCON IN	H	L	Remote control input
21	P60/FTCI	S.FUNC MUTE OUT	H	L	FUNCTION MUTE output (LOW → MUTE ON)
22	P61/FTOA	S.CE	L	H	LC7821-L CE output
23	P62/FTIA	S.DATA	L	H	LC7821-L data output
24	P63/FTIB	S.CLOCK	L	H	LC7821-L clock output
25	P64/FTIC	PLL CE	H	L	PLL CE output
26	P65/FTID	PLL DATA	H	L	PLL DATA output
27	P66/FTOB/$\overline{\text{IRQ6}}$	PLL ST REQ	H	L	PLL REQUEST output
28	P67/$\overline{\text{IRQ7}}$	PLL CLK	H	L	PLL CLOCK output
29	AVCC	AVCC	—	—	VCC connection
30	P70/AN0	KR0	L	H	Key return 0
31	P71/AN1	KR1	L	H	Key return 1
32	P72/AN2	KR2	L	H	Key return 2
33	P73/AN3	KR3	L	H	Key return 3
34	P74/AN4	KR4	L	H	Key return 4
35	P75/AN5	KR5	L	H	Key return 5
36	P76/AN6/DA0	KR6	L	H	Key return 6
37	P77/AN7/DA1	KR7	L	H	Key return 7
38	AVSS	AVSS	—	—	Ground connection
39	P40/TMCI0	KS0	L	H	Key strobe 0
40	P41/TMOO	KS1	L	H	Key strobe 1
41	P42/TMRI0	KS2	L	H	Key strobe 2
42	P43/TMCI1	KS3	L	H	Key strobe 3
43	P44/TMO1	KS4	L	H	Key strobe 4
44	P45/TMRI1	KS5	L	H	Key strobe 5
45	P46/PW0	KS6	L	H	Key strobe 6
46	P47/PW1	KS7	L	H	Key strobe 7
47	VCC	VCC	—	—	VCC connection
48	P27	—			N.C.
49	P26	LCD $\overline{\text{BUSY}}$	H	L	μPD7225 BUSY signal input
50	P25	LCD C/$\overline{\text{D}}$	—	—	I.trol output H: Command transfer L: Data transfer
51	P24	LCD $\overline{\text{RESET}}$	H	L	μPD7225 reset signal input
52	P23	LCD $\overline{\text{CS2}}$	H	L	μPD7225-2 chip select output
53	P22	LCD $\overline{\text{CS1}}$	H	L	μPD7225-1 chip select output
54	P21	LCD SI	H	L	μPD7225 serial data output
55	P20	LCD $\overline{\text{SCK}}$	H	L	μPD7225 serial clock output
56	VSS	VSS	—	—	Ground connection
57	P17	DIMMER OUT	L	H	Power on → High
58	P16	SDB OUT	L	H	SDB in → High (Not using this device)
59	P15	SURR OUT	L	H	Surround on → High
60	P14	20dB MUTE OUT	L	H	20 dB on → High (Not using this device)
61	P13	PROCESSOR MUTE	L	H	PROCESSOR MUTE (LOW → MUTE ON
62	P12	VOL PASS OUT	L	H	Vol. pass on → High (Not using this device)
63	P11	AVC OUT	L	H	Func. AVC → High (Not using this device)
64	P10	PRE OUT	L	H	Preout on → High (Not using this device)
65	P30	VOLUME UP OUT	H	L	Vol. up → High
66	P31	VOLUME DOWN OUT	H	L	Vol. down → High
67	P32	POWER OFF OUT	L	H	After power has been on for 5 s → High (Not using this device)
68	P33	RELAY OUT	L	H	Power on → High (Audio power supply up built into microprocessor)
69	P34	$\overline{\text{SIGNAL}}$ IN	H	L	Tuner signal input (With pull-up built into microprocessor)
70	P35	$\overline{\text{TUNED}}$ IN	H	L	Tuner tuning signal input (With pull-up built into microprocessor)
71	P36	$\overline{\text{STEREO}}$ IN	H	L	Tuner stereo signal input (With pull-up built into microprocessor)
72	P37	$\overline{\text{STOP}}$ IN	H	L	Tuner stop signal input (With pull-up built into microprocessor)
73	VSS	VSS	—	—	Ground connection
74	P80	$\overline{\text{AM STEREO}}$ IN	H	L	AM stereo signal input
75	P81	$\overline{\text{TUNER MUTE}}$ OUT	H	L	Tuner mute output
76	P82	$\overline{\text{AUTO}}$/MONO	L	H	Tuner auto → Low
77	P83	—	—	—	N.C.
78	P84/TXD1/$\overline{\text{IRQ3}}$	—	—	—	N.C.
79	P85/RXD1/$\overline{\text{IRQ4}}$	CD SI	L	H	VCD display DATA input
80	P86/SCK1/$\overline{\text{IRQ5}}$	CD SCK	L	H	VCD display CLOCK input

Description of Key and Selection Switch Inputs [Items using this device ▨]

Key	Function Name	Function
P40-P70	FREQ UP	* Increments the receive frequency in single steps in the tuner mode. Holding down the key for 0.5 seconds or longer causes the frequency to change continuously; releasing the key sets the auto tuning operation. Pressing the key again returns the function to the 1-step mode. * Increments the hours and minutes in single steps when set to the clock. Holding down the key for 0.5 seconds or longer causes the frequency to change continuously; releasing the key returns the function to the 1-step mode. * The timer mode operation is the same as that of the clock mode, but function switching is also performed.
P40-P71	FREQ DOWN	* Increments the receive frequency in single steps in the tuner mode. Holding down the key for 0.5 seconds or longer causes the frequency to change continuously; releasing the key sets the auto tuning operation. Pressing the key again returns the function to the 1-step mode. * Increments the hours and minutes in single steps when set to the clock. Holding down the key for 0.5 seconds or longer causes the frequency to change continuously; releasing the key returns the function to the 1-step mode. * The timer mode operation is the same as that of the clock mode, but function switching is also performed.
P40-P72	BAND	Operates in a cycle; switches between FM and AM.
P40-P73	MONO/STEREO	During FM reception, automatically switches the reception mode to monaural or stereo; or sets the mode to mono only.
P41-P70	CLOCK/DISPLAY	Sets the clock display or the frequency display.
P41-P71	ENTER/NEXT	Moves to the next item during a time setting or when setting the timer.
P41-P72	MEMORY	* When in the tuner mode, this function changes the currently received broadcast station to the memory presetting mode. The station can be registered with the number keys when "MEMORY" is flashing.
P41-P73	FUNCTION	Operates in a cycle and switches the function of the amplifier.
P42-P70	TIMER	Changes the mode to the timer setting mode. Two courses of setting selections are possible.
P42-P71	STANDBY	Determines the operation of the timer setting. The operation is set when the mark lights.
P42-P72	CLEAR	Clears the contents of the timer setting.
P42-P73	POWER	Switches power to the system on and off.
P43-P70	SURROUND	Operates in a cycle; switches surround on and off.
P43-P71	SDB	Operates in a cycle; switches SDB on and off.
P43-P72	-20dB MUTE	Selects whether the 20 dB muting is applied or not. Toggles the -20 dB MUTE OUT pin high and low.
P43-P73	DEMO	Changes the mode to the demo mode. This mode is automatically cancelled when the sequence is completed.
P44-P70	TAPE MONITOR	Selects the tape monitor. When TAPE MONI OUT1 is high, the tape monitor is on. When TAPE MONI OUT1 is low, the tape monitor is off.
P44-P71	DIMMER	Operates in a cycle; goes high when the dimmer is on, goes low when the dimmer is off.
P44-P72	SLEEP	Changes the mode to the sleep mode. The time setting becomes possible, upon another input.
P44-P73	PREOUT	Specifies an on/off setting of the preout function. Toggles PREOUT OUT high and low.
P40-P74	1	Number key, preset call, memory input key
P40-P75	6	Number key, preset call, memory input key
P40-P76	+10	Number key, preset call, memory input key
P40-P76	LW	Switches to the LW reception mode.
P41-P74	2	Number key, preset call, memory input key
P41-P75	7	Number key, preset call, memory input key
P41-P76	PRESET UP	Increments the preset number.
P41-P77		
P42-P74	3	Number key, preset call, memory input key
P42-P75	8	Number key, preset call, memory input key
P42-P76	PRESET DOWN	Decrements the preset number.
P42-P77		
P43-P74	4	Number key, preset call, memory input key
P43-P75	9	Number key, preset call, memory input key
P43-P76	AW (MW)	Switches to the AM (MW) reception mode.
P43-P77		
P44-P74	5	Number key, preset call, memory input key
P44-P75	10 (0)	Number key, preset call, memory input key
P44-P76	FM	Switches to the FM reception mode.
P44-P77		
P45-P70	USA	Sets the selection of reception frequency by location.
P45-P71	EUROPE	Sets the selection of reception frequency by location.
P45-P72	FREQ	Sets the selection of reception frequency by location.
P45-P73	FM WIDE	Switches the FM mode. Short → Wide is available. Open → FM Wide is not available.
P46-P70	OEM1 (DENON)	Open → "HELLO" display. Shorted → "DENON" display.
P46-P71	EX-PHONO	Selects the "AUX" and "PHONO" displays. (No serial data changes.) Open → "AUX" display. Shorted → "PHONO" display.
P46-P72	CD-RETRY	Selects a retry of the serial code at the time of executing EDIT or ARCS. Open → Retry is executed. Shorted → Retry is not executed.
P46-P73	X'TAL	Selects the crystal for sub clock adjustments. Open → Crystal is available; sub clock can be adjusted with timer off. Shorted → Crystal is not available; sub clock can be adjusted.
P47-P70	AM STEREO	Presence of AM stereo. Shorted: Available. Open: Not available.

RECEIVER SECTION

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM


HD6433378A11F
(IC702)
TOP VIEW
BOTTOM VIEW
41 60 40 61 21 80 20 1
CD SCK
CD SI
NC
NC
AUTO / MONO OUT
TUNER MUTE OUT
AM STEREO IN
STOP IN
STEREO IN
TUNED IN
SIGNAL IN
RELAY OUT
POWER OFF OUT
VOL DN
VOL UP
PRE OUT
AVC OUT
VOL PASS OUT
PROCESSOR MUTE
80 P86/SCK1/IRQ5
79 P85/RXD1/IRQ4
78 P84/TXD1/IRQ3
77 P83
76 P82
75 P81
74 P80
73 Vss
72 P37/D7
71 P36/D6
70 P35/D5
69 P34/D4
68 P33/D3
67 P32/D2
66 P31/D1
65 P30/D0
64 P10/A0
63 P11/A1
62 P12/A2
61 P13/A3
1 RES
2 XTAL
3 EXTAL
4 MD1
5 MD0
6 NMI
7 STBY
8 Vcc
9 P52/SCK0
10 P51/RXD0
11 P50/TXD0
12 Vss
13 P97/WAIT
14 P96/0
15 P95/AS
16 P94/WR
17 P93/RD
18 P92/IRQ0
19 P91/IRQ1
20 P90/IRQ2
<5V>
DR SCK
DR SI
NC
TXD
T.P
AVC1
AVC2
PROTECT
RXD
50/60
REMOCON
P14/A4 60
P15/A5 59
P16/A6 58
P17/A7 57
Vss 56
P20/A8 55
P21/A9 54
P22/A10 53
P23/N1 52
P24/A12 51
P25/A13 50
P26/A14 49
P27/A15 48
Vcc 47
P47/PW1 46
P46/PW0 45
P45/TMRI1 44
P44/TMO1 43
P43/TMCI1 42
P42/TMRI0 41
20dB MUTE
SURROUND
SDB
DIMMER
SCK
SI
CS1
CS2
REST
C/D
BUSY
NC
< 5V >
KS7
KS6
KS5
KS4
KS3
KS2
21 P60/FTCI
22 P61/FTOA
23 P62/FTIA
24 P63/FTIB
25 P64/FTIC
26 P65/FTID
27 P66/IRQ6
28 P67/IRQ7
29 AVcc
30 P70/AN0
31 P71/AN1
32 P72/AN2
33 P73/AN3
34 P74/AN4
35 P75/AN5
36 P76/AN6/DA0
37 P77/AN7/DA1
38 AVss
39 P40/TMCI0
40 P41/TMO0
KR0
KR1
KR2
KR3
KR4
KR5
KR6
KR7
KS0
KS1
S. FUNC MUTE
S.CE
S. DATA
S.CLOCK
PLL CE
PLL DATA
PLL ST REQ
PLL CLOCK
<5V>

Matrix Definition 〔Item using this device ▨〕

	P40 (KS0)	P41 (KS1)	P42 (KS2)	P43 (KS3)	P44 (KS4)	P45 (KS5)	P46 (KS6)	P47 (KS7)	
P70 (KR0)	▨ FREQ UP	▨ CLOCK/ DISPLAY	▨ TIMER	▨ SUR-ROUND	TAPE MONI	USA	▨ OEM1 (DENON)	AM STEREO	→
P71 (KR1)	▨ FREQ DOWN	▨ ENTER/ NEXT	▨ STAND BY	▨ SDB	DIMMER	▨ EUROPE	EX PHONO		→
P72 (KR2)	▨ BAND	▨ MEMORY	CLEAR	-20db MUTE	SLEEP	FREQ	CD-RETRY		→
P73 (KR3)	▨ MONO/ STEREO	▨ FUNCTION	▨ POWER	DEMO	PREOUT	FM、WIDE	X'TAL		→

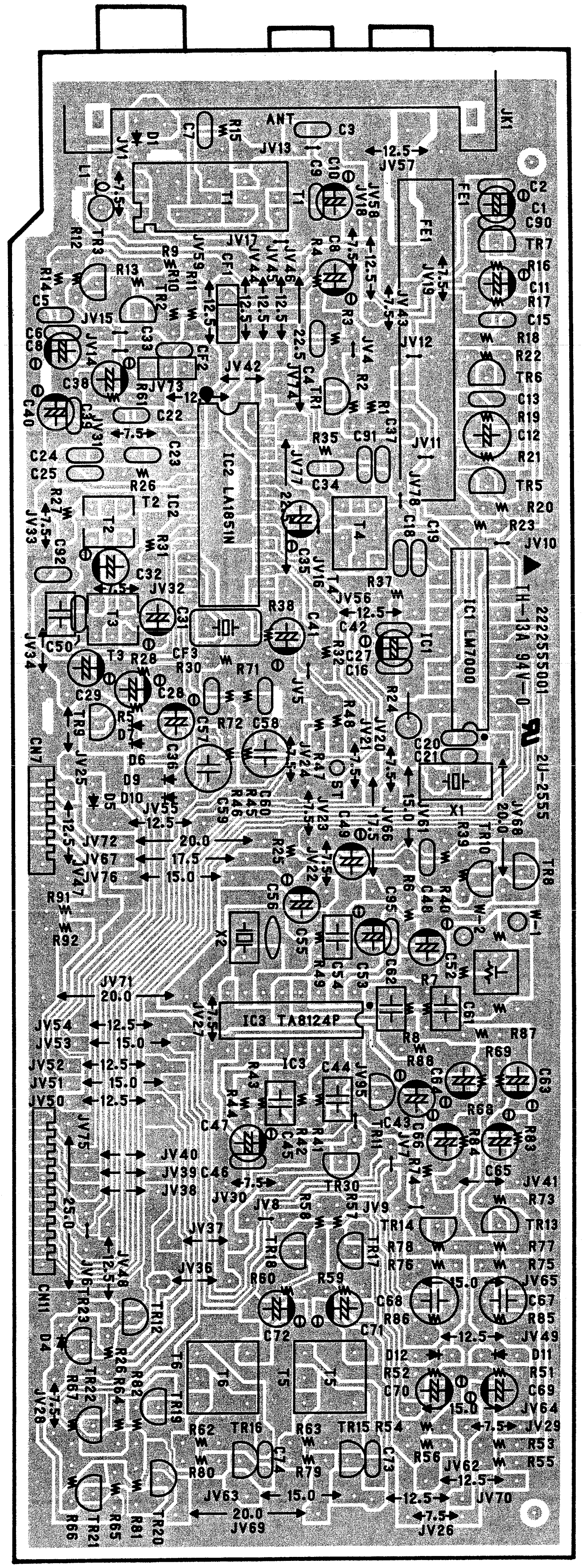
	↓	↓	↓	↓	↓	↓	↓	↓	
P74 (KR4)	1	2	3	4	5				→
P75 (KR5)	6	7	8	9	10 (0)				→
P76 (KR6)	+10 AM/PM	PFESET UP	PRESET DOWN	AM (MW)	FM				→
P77 (KR7)	LW								→

Key matrix

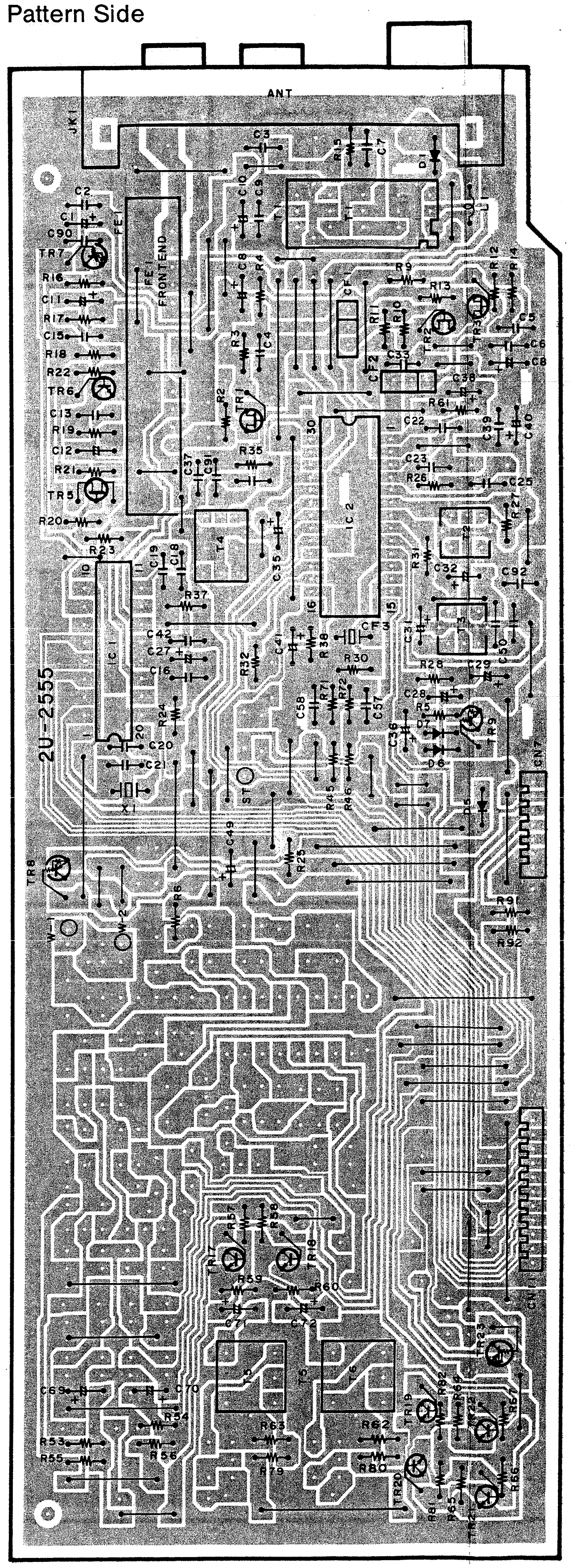
Diodes matrix

2U-2555B TUNER UNIT ASS'Y

Component Side

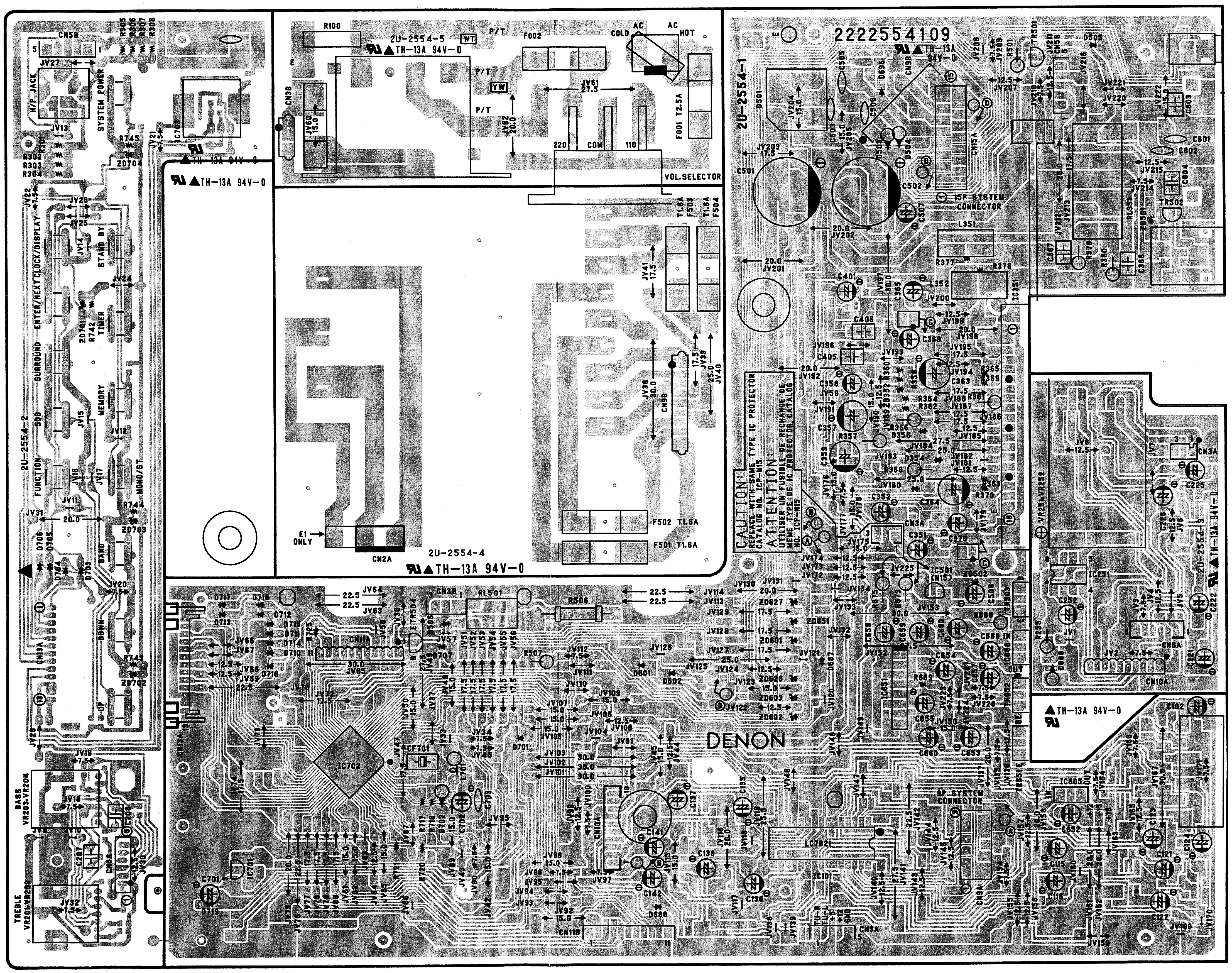

ANT
JK1
FE1
IC1 LM7000
IC2 LA1851N
IC3 TA8124P
2U-2555
2222555001
TH-13A 94V-0

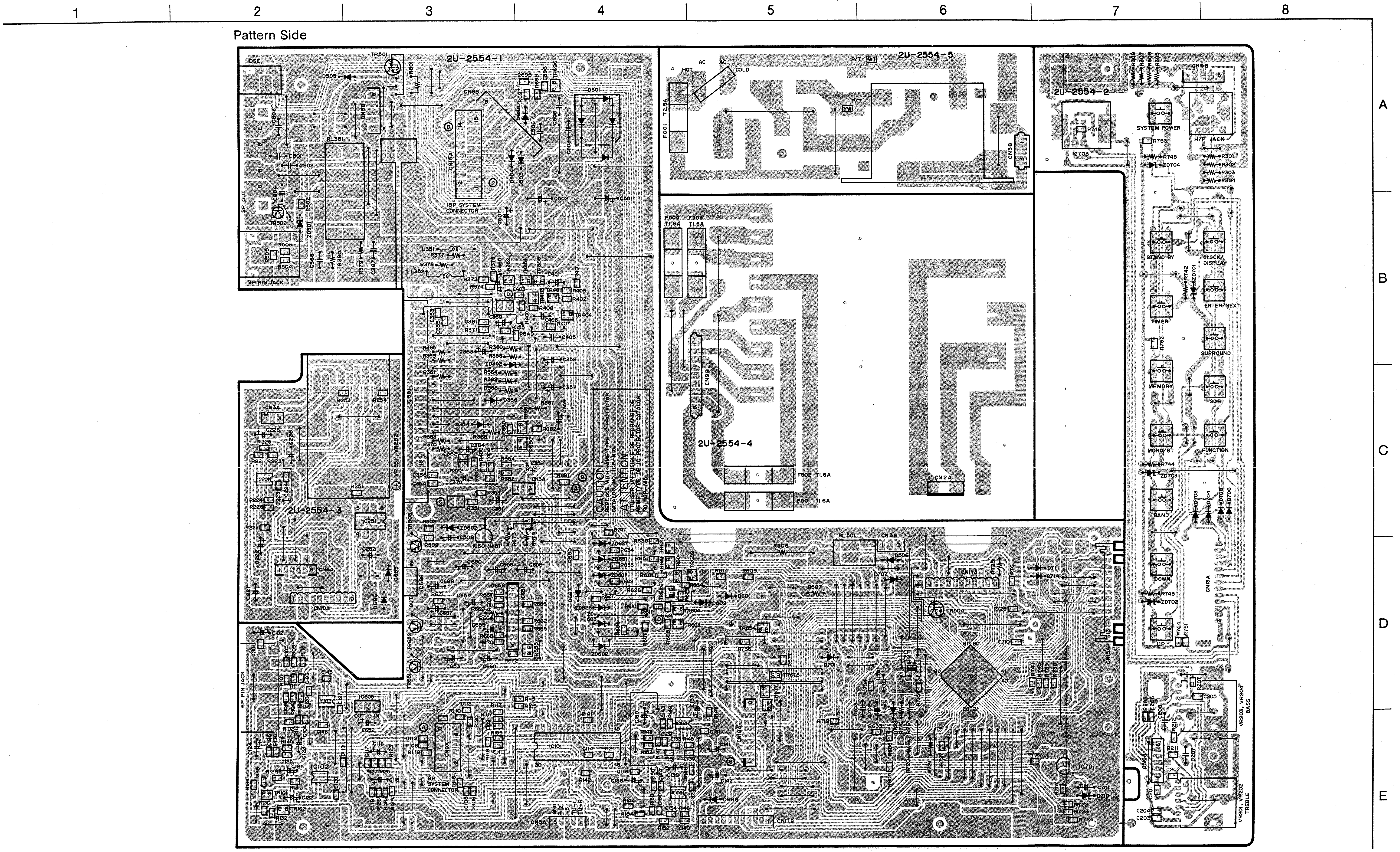
Pattern Side


ANT
JK1
FE1 FRONTEND
IC1
IC2
2U-2555

2U-2554B	
1	Main Unit
2	Display Unit
3	Main Volume Unit
4	Power Supply Unit (1)
5	Power Supply Unit (2)

Component Side 2U-2554B MAIN UNIT ASS'Y


1
2
3
4
5
6
7
8
A
B
C
D
E
2222554109
2U-2554-1
2U-2554-2
2U-2554-3
2U-2554-4
2U-2554-5
TH-13A 94V-0
H/P JACK
SYSTEM POWER
STAND BY
ENTER/NEXT CLOCK/DISPLAY
SURROUND
TIMER
MEMORY
FUNCTION
MONO/ST
BAND
DOWN
UP
BASS VR203·VR204
TREBLE VR201·VR202
VOL.SELECTOR
COLD
HOT
AC
F001 T2.5A
F502 T1.6A
F501 T1.6A
F503 T1.6A
F504 T1.6A
E1 ONLY
CN2A
CN3B
CN11A
CN11B
CN10A
CN5A
CN6A
CN3A
IC702
IC701
IC501
IC251
IC805
IC101
LC7821
RL501
R506
C501
15P SYSTEM CONNECTOR
8P SYSTEM CONNECTOR
CAUTION: REPLACE WITH SAME TYPE IC PROTECTOR CATALOG NO. ICP-N15
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE IC PROTECTOR CATALOG NO. ICP-N15
DENON


1
2
3
4
5
6
7
8
A
B
C
D
E
Pattern Side
2U-2554-1
2U-2554-2
2U-2554-3
2U-2554-4
2U-2554-5
SP OUT
3P PIN JACK
6P PIN JACK
15P SYSTEM CONNECTOR
9P SYSTEM CONNECTOR
SYSTEM POWER
H/P JACK
STAND BY
CLOCK/DISPLAY
ENTER/NEXT
TIMER
SURROUND
MEMORY
SDB
MONO/ST
FUNCTION
BAND
DOWN
UP
VR203, VR204 BASS
VR201, VR202 TREBLE
F001 T2.5A
F503 T1.6A
F504 T1.6A
F502 T1.6A
F501 T1.6A
HOT
COLD
AC
IC351
IC501(N15)
IC702
IC703
IC701
IC101
IC102
IC605
IC251
IC201
RL351
RL501
CAUTION:
REPLACE WITH SAME TYPE IC PROTECTOR
CATALOG NO. ICP-N15
ATTENTION:
UTILISER UN FUSIBLE DE RECHANGE DE
MEME TYPE DE IC PROTECTOR CATALOG
NO. ICP-N15

RECEIVER SECTION

NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

- **Resistors**

x.:	RN	14K	2E	182	G	FR
	Type	Shape and performance	Power	Resistance	Allowable error	Others

Type	Power	Allowable error	Others
RD : Carbon Film	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metallic oxide Film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

Resistance

1 8 2 ⇨ 1800 ohm = 1.8 kohm
2 ——Indicates number of zeros after effective number
1 8 ——2-digit effective number

- Units: ohm

1 R 2 ⇨ 1.2 ohm
2 ——1-digit effective number.
1 R ——2-digit effective number, decimal point indicated by R.

- Units: ohm

Capacity (electrolyte only)

2 2 R ⇨ 2200 μF
R ——Indicates number of zeros after effective number.
2 2 ——2-digit effective number.

- Units: μF

2 R 2 ⇨ 2.2 μF
2 ——1-digit effective number.
2 R ——2-digit effective number, decimal point indicated by R.

- Units: μF

- **Capacitors**

Ex.:	CE	04W	1H	2R2	M	BP
	Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others

Type	Dielectric strength	Allowable error	Others
CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80% −20%	U : UL part
CP : Oil	2A : 100V		C : CSA part
CM : Mica	2B : 125V	P : +100% −0%	W : UL-CSA type
CF : Metallized	2C : 160V		F : Lead wire forming
CH : Metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

※ Capacity (except electrolyte)

2 R 2 ⇨ 2200pF = 2200 μF = 0.002 μF
2 ——(More than 2)——Indicates number of zeros after effective number.
2 R ——2-digit effective number.

- Units: μF

2 2 1 ⇨ 220pF
1 ——(0 or 1)—— Indicates number of zeros after effective number.
2 2 ——2-digit effective number.

- Units: pF
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

2U-2554B MAIN UNIT ASS'Y PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	262 1227 008	IC LC7821	
IC102,103	263 0615 902	IC BA15218F	
IC104,105	263 0896 909	IC NJM2068MD	
IC201	263 0615 902	IC BA15218F	
IC251	263 0476 002	IC LB1639	
IC351	265 0073 003	IC STK4152Ⅱ	
IC501	268 0073 905	IC ICP-N15	IC Protector 15 V
IC605	263 0794 001	IC NJM78M12FA(S)	Regulator +12 V
IC651	263 0646 007	IC M5230L	
IC688	263 0793 002	IC NJM7806FA(S)	Regulator +6 V
IC701	263 0652 907	IC PST529C	
IC702	262 1821 103	IC HD6433378A11F	μ-com
IC703	499 0150 008	Rem. Receiv. SBX1610-52	
TR101,102	269 0103 904	Transistor DTC314TK	Chip Built in R.
TR351,352	273 0384 900	Transistor 2SC2412K(S)	Chip
TR353	271 0238 908	Transistor 2SA1037K(S/R)	Chip
TR401	269 0055 900	Transistor DTA144EK	Chip Built in R.
TR403,404	269 0103 904	Transistor DTC314TK	Chip Built in R.
TR501	269 0020 906	Transistor DTC114ES	Built in Resistor
TR502	273 0303 910	Transistor 2SC1740S(S)	
TR503	274 0120 002	Transistor 2SD1762(E/F)	
TR504	269 0020 906	Transistor DTC114ES	Built in Resistor
TR601,602	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR603,604	273 0384 900	Transistor 2SC2412K(S)	
TR626	269 0055 900	Transistor DTA144EK	Chip Built in R.
TR627	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR651	271 0206 008	Transistor 2SA1488(Y)/(G)	
TR652	273 0333 008	Transistor 2SC3851(Y)/(G)	
TR653,654	269 0054 901	Transistor DTA114EK	Chip Built in R.
TR661	269 0054 901	Transistor DTA114EK	Chip Built in R.
TR676	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR677,678	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR680	269 0055 900	Transistor DTA144EK	Chip Built in R.
TR681	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR696	273 0384 900	Transistor 2SC2412K(S)	Chip
D354	276 0503 900	Diode 1SS198	
D356	276 0503 900	Diode 1SS198	
⚠D501	276 0338 007	Diode S4VB20F	Bridge
D503,504	276 0553 905	Diode 1SR35-200A	
D505,506	276 0616 907	Diode 1SS252	
D507,508	276 0553 905	Diode 1SR35-200A	
D601,602	276 0503 900	Diode 1SS198	
D685,686	276 0553 905	Diode 1SR35-200A	
D687,688	276 0531 901	Diode 1SS254	
D696	276 0616 907	Diode 1SS252	
D701	276 0531 901	Diode 1SS254	
D702	276 0553 905	Diode 1SR35-200A	
D703~707	276 0531 901	Diode 1SS254	
D711	276 0531 901	Diode 1SS254	
D714	276 0531 901	Diode 1SS254	
D719,720	276 0531 901	Diode 1SS254	
ZD352	276 0455 906	Zener Diode HZS4A-1	4 V
ZD501	276 0474 903	Zener Diode HZS12B-1	12 V
ZD502	276 0477 900	Zener Diode HZS16-1	16 V
ZD601~603	276 0462 902	Zener Diode HZS6B-1	6 V
ZD626,627	276 0462 902	Zener Diode HZS6B-1	6 V
ZD651	276 0462 902	Zener Diode HZS6B-1	6 V
ZD701~704	276 0462 902	Zener Diode HZS6B-1	6 V
RESISTORS GROUP			
⚠R255	244 2050 904	Metal Oxide 22 ohm 1W (NB)	RS14B3A220JNBS(S)
⚠R357	241 2377 947	Carbon Film 100 ohm 1/4W (NB)	RD14B2E101JNBS
⚠R361	241 2377 947	Carbon Film 100 ohm 1/4W (NB)	RD14B2E101JNBS
⚠R366	244 2043 982	Metal Oxide 0.22 ohm 1W (NB)	RS14B3AR22JNBS(S)
⚠R368	244 2043 982	Metal Oxide 0.22 ohm 1W (NB)	RS14B3AR22JNBS(S)
⚠R379,380	244 2051 987	Metal Oxide 4.7 ohm 1W (NB)	RS14B3A4R7JNBS(S)
⚠R501	244 2051 958	Metal Oxide 220 ohm 1W (NB)	RS14B3A221JNBS(S)
⚠R506	244 0073 022	Metal Oxide 8.2 ohm 2W (NB)	RS14B3D8R2JNBF
⚠R507	244 2055 941	Metal Oxide 330 ohm 1W (NB)	RS14B3A331JNBS(S)
⚠R673	241 2387 908	Carbon Film 1 ohm 1/4W (NB)	RD14B2E010JNBS
⚠R675	241 2387 908	Carbon Film 1 ohm 1/4W (NB)	RD14B2E010JNBS
⚠R688	244 2043 937	Metal Oxide 10 ohm 1W (NB)	RS14B3A100JNBS(S)
R101,102	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R103~106	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R107,108	247 0008 999	Chip Carbon 4.3k ohm 1/10W	RM73B--432J
R109,110	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R111,112	247 0013 984	Chip Carbon 470k ohm 1/10W	RM73B--474J
R113,114	247 0009 927	Chip Carbon 5.6k ohm 1/10W	RM73B--562J
R115,116	247 0005 992	Chip Carbon 240 ohm 1/10W	RM73B--241J
R117~120	247 0006 962	Chip Carbon 470 ohm 1/10W	RM73B--471J
R121	247 0014 925	Chip Carbon 680k ohm 1/10W	RM73B--684J
R123,124	247 0006 962	Chip Carbon 470 ohm 1/10W	RM73B--471J
R125,126	247 0013 984	Chip Carbon 470k ohm 1/10W	RM73B--474J
R127,128	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R129,130	247 0006 962	Chip Carbon 470 ohm 1/10W	RM73B--471J
R131,132	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R133,134	247 0006 962	Chip Carbon 470 ohm 1/10W	RM73B--471J
R135,136	247 0013 984	Chip Carbon 470k ohm 1/10W	RM73B--474J
R137,138	247 0008 928	Chip Carbon 2.2k ohm 1/10W	RM73B--222J
R141,142	247 0007 929	Chip Carbon 820 ohm 1/10W	RM73B--821J
R143,144	247 0008 902	Chip Carbon 1.8k ohm 1/10W	RM73B--182J
R145,146	247 0007 990	Chip Carbon 1.6k ohm 1/10W	RM73B--162J
R147,148	247 0005 947	Chip Carbon 150 ohm 1/10W	RM73B--151J
R149,150	247 0010 987	Chip Carbon 27k ohm 1/10W	RM73B--273J
R151,152	247 0003 981	Chip Carbon 33 ohm 1/10W	RM73B--330J
R153,154	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R207,208	247 0010 958	Chip Carbon 20k ohm 1/10W	RM73B--203J
R211,212	247 0008 973	Chip Carbon 3.6k ohm 1/10W	RM73B--362J
R221,222	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R223~226	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R253,254	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R301~308	241 2398 984	Carbon Film 1.3k ohm 1/4W	RD14B2E132J(5)
R349,350	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R351,352	247 0011 986	Chip Carbon 68k ohm 1/10W	RM73B--683J
R353,354	247 0006 920	Chip Carbon 330 ohm 1/10W	RM73B--331J
R355,356	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R358	241 2400 911	Carbon Film 4.7k ohm 1/4W	RD14B2E472J(5)
R360	241 2401 936	Carbon Film 15k ohm 1/4W	RD14B2E153J(5)
R362	241 2399 925	Carbon Film 2k ohm 1/4W	RD14B2E202J(5)
R363	241 2399 938	Carbon Film 2.2k ohm 1/4W	RD14B2E222J(5)
R364	241 2399 925	Carbon Film 2k ohm 1/4W	RD14B2E202J(5)
R365	241 2399 938	Carbon Film 2.2k ohm 1/4W	RD14B2E222J(5)
R369,370	241 2399 938	Carbon Film 2.2k ohm 1/4W	RD14B2E222J(5)
R371,372	247 0011 986	Chip Carbon 68k ohm 1/10W	RM73B--683J
R373,374	247 0011 960	Chip Carbon 56k ohm 1/10W	RM73B--563J
R375	247 0010 932	Chip Carbon 16k ohm 1/10W	RM73B--163J
R377,378	241 2393 905	Carbon Film 4.7 ohm 1/4W	RD14B2E4R7J
R401	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R402,403	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R405,406	247 0008 986	Chip Carbon 3.9k ohm 1/10W	RM73B--392J
R407,408	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R502	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R503,504	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R505	247 0006 904	Chip Carbon 270 ohm 1/10W	RM73B--271J
R508	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R509	241 2400 911	Carbon Film 4.7k ohm 1/4W	RD14B2E472J(5)
R601	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R602	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R604,605	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R606	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R607	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R608	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R609	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R610	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R611	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R612	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R613	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R626	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R627	247 0009 901	Chip Carbon 4.7kohm 1/10W	RM73B--472J
R629	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R630	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R633	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R634	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R651	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R653	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R656	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R662	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J
R663	247 0010 932	Chip Carbon 16k ohm 1/10W	RM73B--163J
R664	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R665,666	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R667	247 0010 932	Chip Carbon 16k ohm 1/10W	RM73B--163J
R668	247 0008 928	Chip Carbon 2.2k ohm 1/10W	RM73B--222J
R669	241 2399 938	Carbon Film 2.2k ohm 1/4W	RD14B2E222J(5)
R670,671	247 0005 989	Chip Carbon 220 ohm 1/10W	RM73B--221J
R672	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R677	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R680~682	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R696	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R697	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R698	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R715	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R716,717	241 2403 934	Carbon Film 100k ohm 1/4W	RD14B2E104J(5)
R718	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R720,721	241 2403 934	Carbon Film 100k ohm 1/4W	RD14B2E104J(5)
R722~724	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R725	241 2403 934	Carbon Film 100k ohm 1/4W	RD14B2E104J(5)
R726	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R727	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R736	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J

Ref. No.	Part No.	Part Name	Remarks
R738~741	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R742~745	241 2402 951	Carbon Film 47k ohm 1/4W	RD14B2E473J(5)
R746	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R747	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R751~754	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R756	247 0006 962	Chip Carbon 470 ohm 1/10W	RM73B--471J
R757	247 0011 957	Chip Carbon 51k ohm 1/10W	RM73B--513J
VR251,252	211 0749 107	Variable Resistor 100k ohm	Main VR
VR201~204	211 0796 008	Variable Resistor 100k ohm	Tone VR
CAPACITORS GROUP			
C101	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C102	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C103,104	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J
C105~112	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C113,114	257 0012 982	Chip Ceramic 0.022μF/50V	CK73F1H223Z
C115,116	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C117,118	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C119,120	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C121~124	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C125,126	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C127,128	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C129,130	257 0007 900	Chip Ceramic 1000pF/50V	CC73SL1H102J
C131,132	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C133,134	257 0005 986	Chip Ceramic 330pF/50V	CC73SL1H331J
C135,136	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M
C137,138	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C139,140	257 0009 924	Chip Ceramic 2200pF/50V	CC73SL1H222J
C141,142	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C143,144	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C145,146	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C201,202	257 0009 924	Chip Ceramic 2200pF/50V	CK73B1H222K
C203,204	257 0010 913	Chip Ceramic 0.012μF/50V	CK73B1H123K
C205,206	257 0011 967	Chip Ceramic 0.033μF/50V	CK73B1H333K
C207,208	256 1035 907	Metalized 0.18μF/50V	CF93A1H184J
C221,222	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M
C223,224	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C225,226	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C227,228	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J
C251	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C252	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C351,352	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C353,354	257 0005 986	Chip Ceramic 330pF/50V	CC73SL1H331J
C355,356	257 0006 969	Chip Ceramic 680pF/50V	CC73SL1H681J
C357	254 4261 921	Electrolytic 100μF/50V	CE04W1H101M
C358	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C359	254 4261 921	Electrolytic 100μF/50V	CE04W1H101M
C361,362	257 0004 903	Chip Ceramic 56pF/50V	CC73SL1H560J
C363,364	254 4261 921	Electrolytic 100μF/50V	CE04W1H101M
C365	254 4250 916	Electrolytic 47μF/6.3V	CE04W0J470M
C367,368	255 4224 903	Plastic Film 0.047μF/50V	CQ92M1H473J
C369,370	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M
C396	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C403,404	257 0009 953	Chip Ceramic 3900pF/50V	CC73SL1H392J
C405,406	255 4199 957	Plastic Film 0.018μF/50V	CQ92M1H183J(MRZ)
C500	253 9037 908	BC Ceramic 0.1μF/50V	CK45=1H104Z
C501,C502	254 4424 700	Electrolytic 4700μF/45V	CE04W==472MC
C503	256 1042 903	Metalized 0.1μF/250V	CF93A2A104K
C505,506	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C507	254 4260 993	Electrolytic 22μF/50V	CE04W1H220M
C508	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M
C601	254 4250 916	Electrolytic 47μF/6.3V	CE04W0J470M
C652	254 4256 907	Electrolytic 10μF/25V	CE04W1E100M
C653,654	254 4256 910	Electrolytic 22μF/25V	CE04W1E220M
C655	254 4260 948	Electrolytic 1μF/50V	CE04D1H010M
C656	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C657	254 4260 948	Electrolytic 1μF/50V	CE04D1H010M
C658,659	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M

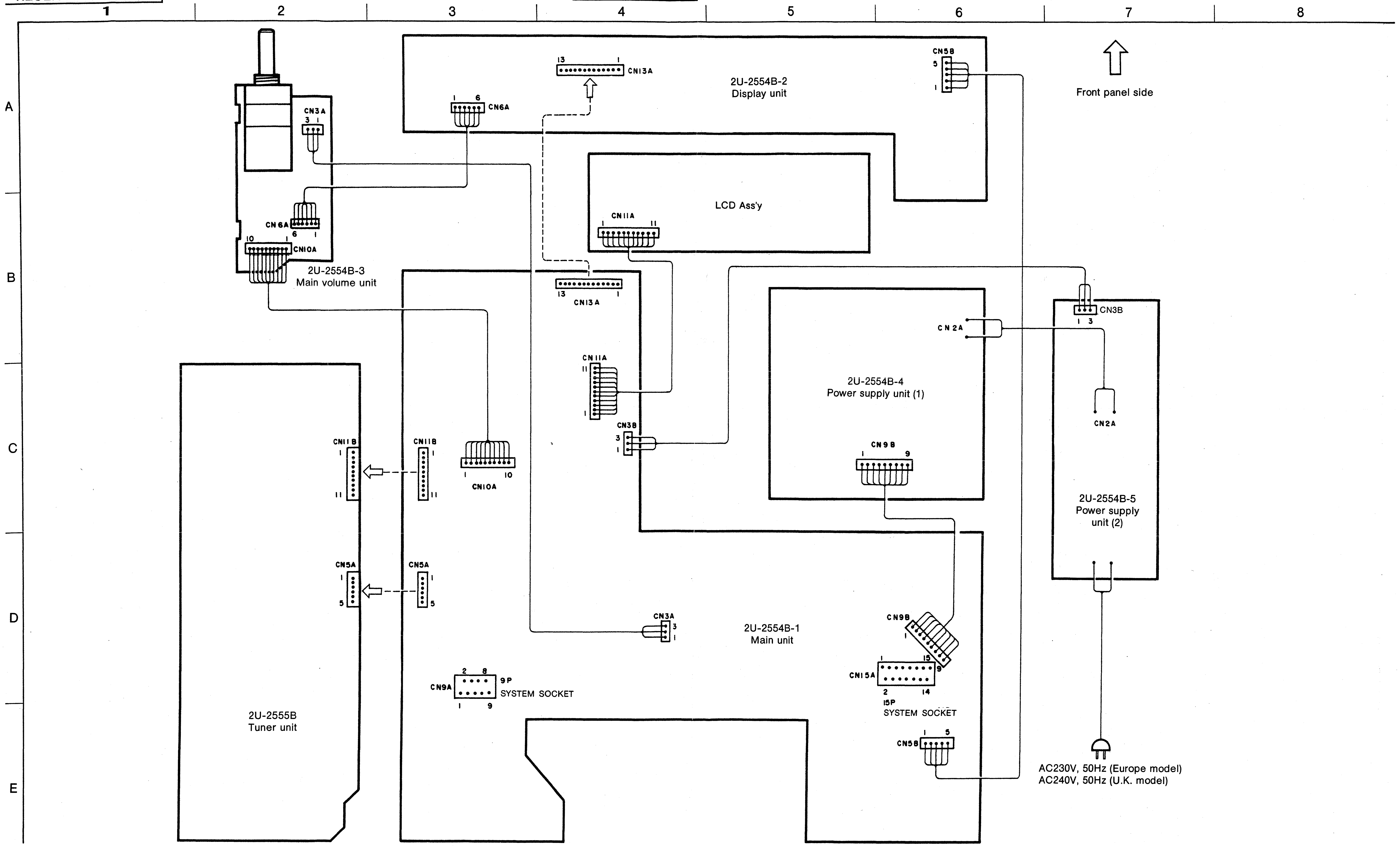
Ref. No.	Part No.	Part Name	Remarks	
C660	254 4260 948	Electrolytic 1μF/50V	CE04D1H010M	
C680	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z	
C688	254 4252 927	Electrolytic 47μF/10V	CE04W1A470M	
C690	254 4256 949	Electrolytic 100μF/25V	CE04W1E101M	
C701	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22M	
C702	254 4250 071	Electrolytic 2200μF/6.3V	CE04W0J222M	
C703	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z	
C704	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z	
C710	253 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z	
C711	254 4250 916	Electrolytic 47μF/6.3V	CE04W0J470M	
C801,802	253 9038 907	BC Ceramic 0.047μF/50V	CK45=1H473Z	
C803,804	255 1212 905	Plastic Film 0.01μF/50V	CQ93M1H103J	
OTHERS GROUP				**Q'ty**
	—	(P.W.Board)		(1)
L351,352	235 0068 004	Inductor(1μH)		2
L701	235 0070 995	Inductor(220μH)		1
RL351	214 0154 005	Relay(VB24SMBU)		1
RL501	214 0166 006	Relay(SY-128-K)		1
⚠	223 6050 007	Power Trans(Mini)		1
⚠F001	206 1015 029	Fuse 1 A T		1
⚠F501~504	206 1015 058	Fuse 1.6 A		4
CF701	399 0216 901	Ceramic Resonator	CSA20.00MX8	1
	212 5504 910	Tact Switch		13
	202 0040 909	Fuse Clip		10
	204 0592 003	4 P Push Terminal		1
	204 8439 000	3 P Pin Jack		1
	204 8436 003	6 P Pin Jack		1
	204 8421 005	Mini Jack		1
	204 8437 002	Headphone Jack		1
	205 0553 097	9 P Trap Conn. Base		1
	205 0554 054	15 P Trap Conn. Base		1
	205 0535 099	11 P Conn. Base		1
	205 0535 086	7 P Conn. Base		1
	205 0817 005	13 P Bottom Socket		1
	205 0818 004	13 P Bottom Plug		1
	205 0233 058	5 P EH Conn. Base		2
	205 0233 032	3 P EH Conn. Base		1
	205 0233 090	9 P EH Conn. Base		1
	205 0581 001	2 P VH Conn. Base		1
	205 0243 035	3 P Wire Holder		1
	205 0243 093	9 P Wire Holder		1
	203 4936 009	3 P SAN-PH Conn. Cord		1
	204 0406 002	6 P SAN-PH Conn. Cord		1
	204 6423 005	10 P KR-DS Conn. Cord		1
	203 4846 018	3 P EH Conn. Cord		1
	204 2591 009	9 P EH Conn. Cord		1
	203 4776 036	3 P VH Conn. Cord		1
	204 6424 004	11 P KR-DA Conn. Cord		1
	203 2322 013	2 P SCN-SCN Conn. Cord		1
	203 0483 022	1 P SIN Conn. Cord		2
	203 2344 004	2 P SIN Conn. Cord		1
	205 0624 007	:2 P AC Conn. Base		1
	205 0452 017	Style Pin		2
	203 0504 053	1 P Contact Ass'y		1
	205 0343 032	3 P Conn. Base(KR-PH)		1
	205 0343 061	6 P Conn. Base(KR-PH)		1
	205 0375 000	10 P Conn. Base(KR-PH)		1
	513 1935 081	Fuse Label		1

2U-2555B TUNER UNIT ASS'Y PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC001	262 0703 002	IC LM7000	
IC002	263 0704 004	IC LA1851N	
TR001	275 0051 909	N-FET 2SK161(GR)	
TR002,003	273 0422 901	Transistor 2SC2410S	
TR005	275 0043 946	N-FET 2SK381(C)	
TR006	273 0303 910	Transistor 2SC1740S(S)	
TR007,008	269 0093 904	Transistor DTA144ES	Built in Resistor
TR009	269 0040 902	Transistor DTC144ES	Built in Resistor
TR017~022	273 0303 910	Transistor 2SC1740S(S)	
TR023	269 0093 904	Transistor DTA144ES	Built in Resistor
D001	276 0531 901	Diode 1SS254	
D006,007	276 0531 901	Diode 1SS254	
RESISTORS GROUP			
R002	241 2396 928	Carbon Film 100 ohm 1/4W	RD14B2E101J(5)
R003	241 2397 943	Carbon Film 330 ohm 1/4W	RD14B2E331J(5)
R004	241 2396 928	Carbon Film 100 ohm 1/4W	RD14B2E101J(5)
R005	241 2405 916	Carbon Film 560k ohm 1/4W	RD14B2E564J(5)
R009	241 2396 928	Carbon Film 100 ohm 1/4W	RD14B2E101J(5)
R010	241 2397 943	Carbon Film 330 ohm 1/4W	RD14B2E331J(5)
R011	241 2401 936	Carbon Film 15k ohm 1/4W	RD14B2E153J(5)
R012	241 2397 943	Carbon Film 330 ohm 1/4W	RD14B2E331J(5)
R013	241 2398 955	Carbon Film 1k ohm 1/4W	RD14B2E102J(5)
R014	241 2401 994	Carbon Film 27k ohm 1/4W	RD14B2E273J(5)
R015	241 2403 934	Carbon Film 100k ohm 1/4W	RD14B2E104J(5)
R016,017	241 2396 928	Carbon Film 100 ohm 1/4W	RD14B2E101J(5)
R018	241 2402 951	Carbon Film 47k ohm 1/4W	RD14B2E473J(5)
R019	241 2399 970	Carbon Film 3.3k ohm 1/4W	RD14B2E332J(5)
R020	241 2397 901	Carbon Film 220 ohm 1/4W	RD14B2E221J(5)
R021	241 2397 972	Carbon Film 470 ohm 1/4W	RD14B2E471J(5)
R022	241 2397 998	Carbon Film 560 ohm 1/4W	RD14B2E561J(5)
R023	241 2400 937	Carbon Film 5.6k ohm 1/4W	RD14B2E562J(5)
⚠R024	241 2375 907	Carbon Film 10 ohm 1/4W(NB)	RD14B2E100JNBS
R025	241 2400 995	Carbon Film 10k ohm 1/4W	RD14B2E103J(5)
R026	241 2400 979	Carbon Film 8.2k ohm 1/4W	RD14B2E822J(5)
R027	241 2399 941	Carbon Film 2.4k ohm 1/4W	RD14B2E242J(5)
R028	241 2400 924	Carbon Film 5.1k ohm 1/4W	RD14B2E512J(5)
R030	241 2399 954	Carbon Film 2.7k ohm 1/4W	RD14B2E272J(5)
R031	241 2398 939	Carbon Film 820 ohm 1/4W	RD14B2E821J(5)
R032	241 2403 934	Carbon Film 100k ohm 1/4W	RD14B2E104J(5)
R035	241 2401 936	Carbon Film 15k ohm 1/4W	RD14B2E153J(5)
R037	241 2400 995	Carbon Film 10k ohm 1/4W	RD14B2E103J(5)
R038	241 2400 966	Carbon Film 7.5k ohm 1/4W	RD14B2E752J(5)
R045,046	241 2396 928	Carbon Film 100 ohm 1/4W	RD14B2E101J(5)
R053	241 2402 935	Carbon Film 39k ohm 1/4W	RD14B2E393J(5)
R054,055	241 2400 995	Carbon Film 10k ohm 1/4W	RD14B2E103J(5)
R056	241 2402 935	Carbon Film 39k ohm 1/4W	RD14B2E393J(5)
R057,058	241 2398 971	Carbon Film 1.2k ohm 1/4W	RD14B2E122J(5)
R059,060	241 2397 969	Carbon Film 390 ohm 1/4W	RD14B2E391J(5)
R061	241 2400 995	Carbon Film 10k ohm 1/4W	RD14B2E103J(5)
R062,063	241 2399 954	Carbon Film 2.7k ohm 1/4W	RD14B2E272J(5)
R064,065	241 2397 972	Carbon Film 470 ohm 1/4W	RD14B2E471J(5)
R066	241 2400 911	Carbon Film 4.7k ohm 1/4W	RD14B2E472J(5)
R069	241 2400 911	Carbon Film 4.7k ohm 1/4W	RD14B2E472J(5)
R071,072	241 2400 995	Carbon Film 10k ohm 1/4W	RD14B2E103J(5)
R079,080	241 2397 972	Carbon Film 470 ohm 1/4W	RD14B2E471J(5)
R081,082	241 2400 911	Carbon Film 4.7k ohm 1/4W	RD14B2E472J(5)

Ref. No.	Part No.	Part Name	Remarks	
CAPACITORS GROUP				
C001	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M	
C002~004	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C005	253 1196 915	Ceramic 0.022μF/25V	CK14F1E223M	
C006	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C007	253 1190 940	Ceramic 15pF/50V	CK14SL1H150J	
C008	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C009	253 1196 915	Ceramic 0.022μF/25V	CK14F1E223M	
C010	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M	
C011	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1M	
C012	254 3056 917	Electrolytic 1μF/50V (Bipole)	CE04D1H010MBP	
C013	253 1196 915	Ceramic 0.022μF/25V	CK14F1E223M	
C015	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C016	253 1196 915	Ceramic 0.022μF/25V	CK14F1E223M	
C018,019	253 1193 934	Ceramic 100pF/50V	CK14B1H101K	
C020,021	253 1190 940	Ceramic 15pF/50V	CK14SL1H150J	
C022	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C023	253 1195 987	Ceramic 6800pF/16V	CK14X1C682M	
C025	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C027	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C028,029	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	
C030	255 4201 984	Plastic Film 560pF/50V	CQ93P1H561J	
C031,032	254 4254 912	Electrolytic 22μF/16V	CE04W1C220M	
C033,034	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C035	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C036	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M	
C037	253 1193 934	Ceramic 100pF/50V	CK14B1H101K	
C038	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	
C039	253 1193 934	Ceramic 100pF/50V	CK14B1H101K	
C040	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C041	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1M	
C042	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C057,058	253 9035 900	BC Ceramic 0.012μF/25V	CK45=1E123K	
C069,070	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	
C071,072	254 4260 964	Electrolytic 33μF/50V	CE04W1H3R3M	
C090~092	253 1196 902	Ceramic 0.01μF/25V	CK14F1E103M	
C095	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
OTHERS GROUP				**Q'ty**
	—	(P.W.Board)		(1)
L001	235 0060 905	Inductor 2.2μH		1
CF001,002	261 0064 007	FM Ceramic Filter	SFT10.7MS2	2
CF003	261 0104 006	AM Ceramic Filter	CSB456F15	1
FF001	216 0093 007	FM Front End(U)		1
T001	231 3032 006	MW Ant. -Osc Coi		1
T002	232 3033 005	FM IFT		1
T004	231 3034 004	AM IFT		1
T005,006	232 0180 006	:MPX Filter		2
	232 0152 005	Anti Birdie Filter		1
X001	399 0075 003	Crystal(7.2MHz)		1
JK001	205 0776 007	3 P Ant.Terminal(PAL)		1
CN007	205 0536 085	7 P Conn. Socket		1
CN011	205 0536 098	11 P Conn. Socket		1
	461 0415 007	Rubber Sheet		1
	412 3708 201	Earth Plate		1

WIRING DIAGRAM


1
2
3
4
5
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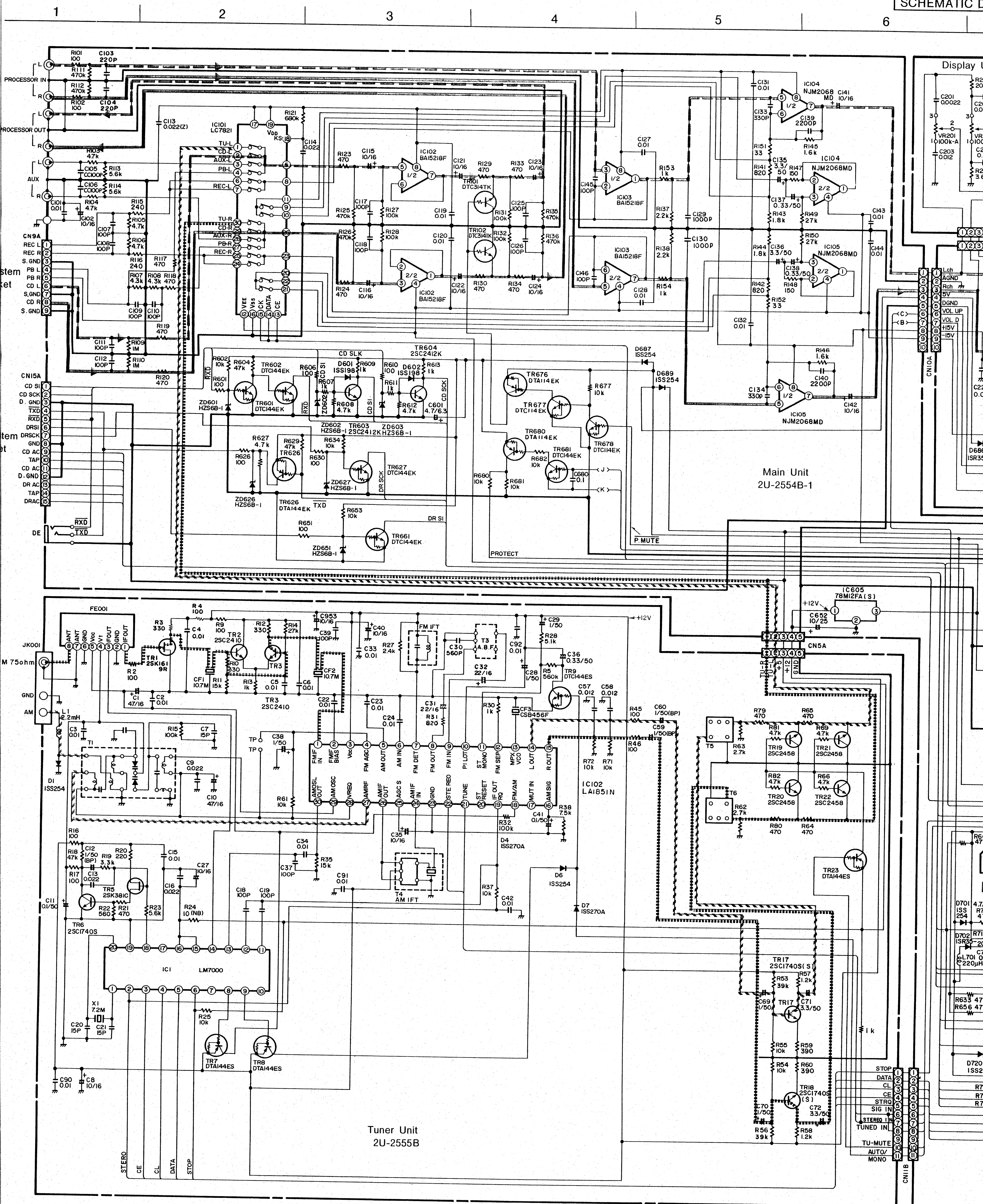
A
B
C
D
E
2U-2554B-2
Display unit
CN13A
13
1
CN6A
1
6
CN5B
5
1
Front panel side
CN3A
3 1
CN6A
6 1
CN10A
10 1
2U-2554B-3
Main volume unit
LCD Ass'y
CN11A
1 11
CN13A
13 1
CN3B
1 3
CN2A
2U-2554B-4
Power supply unit (1)
CN11A
11
1
CN3B
3
1
CN9B
1 9
2U-2554B-5
Power supply unit (2)
CN2A
CN11B
1
11
CN11B
1
11
CN10A
1 10
CN5A
1
5
CN5A
1
5
CN3A
3
1
2U-2554B-1
Main unit
CN9B
1
9
15
CN15A
1
2 14
15P
SYSTEM SOCKET
CN9A
2 8
1 9
9P
SYSTEM SOCKET
CN5B
1 5
2U-2555B
Tuner unit
AC230V, 50Hz (Europe model)
AC240V, 50Hz (U.K. model)


1
2
3
4
5
6
PROCESSOR IN
PROCESSOR OUT
AUX
CN9A
REC L
REC R
S.GND
PB L
PB R
CD L
S.GND
CD R
S.GND
CN15A
CD SI
CD SCK
D.GND
TXD
RXD
DRSI
DRSCK
GND
CD AC
TAP
CD AC
D.GND
DR AC
TAP
DRAC
DE
IC101 LC7821
IC102 BA15218F
IC103 BA15218F
IC104 NJM2068MD
IC105 NJM2068MD
TR101 DTC314TK
TR102 DTC314TK
TR602 DTC144EK
TR603 2SC2412K
TR604 2SC2412K
TR626 DTA144EK
TR627 DTC144EK
TR661 DTC144EK
TR676 DTA114EK
TR677 DTC114EK
TR678 DTC114EK
TR680 DTA114EK
TR681 DTC144EK
CD SLK
PROTECT
P.MUTE
Main Unit
2U-2554B-1
Display U
CN10A
Lch
AGND
Rch
5V
DGND
VOL UP
VOL D
+15V
-15V
IC605 78M12FA(S)
+12V
CN5A
FE001
JK001
75ohm
GND
AM
TR1 2SK161
TR2 2SC2410
TR3 2SC2410
TR5 2SK381C
TR6 2SC1740S
TR7 DTA144ES
TR8 DTA144ES
TR9 DTC144ES
FM IFT
T3 A.B.F
T4 AM IFT
CF1 10.7M
CF2 10.7M
CF3 CSB456F
IC102 LA1851N
IC1 LM7000
X1 7.2M
TR17 2SC1740S(S)
TR18 2SC1740S(S)
TR19 2SC2458
TR20 2SC2458
TR21 2SC2458
TR22 2SC2458
TR23 DTA144ES
T5
T6
Tuner Unit
2U-2555B
STEREO
CE
CL
DATA
STOP
STOP
DATA
CL
CE
STRQ
SIG IN
STEREO IN
TUNED IN
TU-MUTE
AUTO/MONO
CN11B

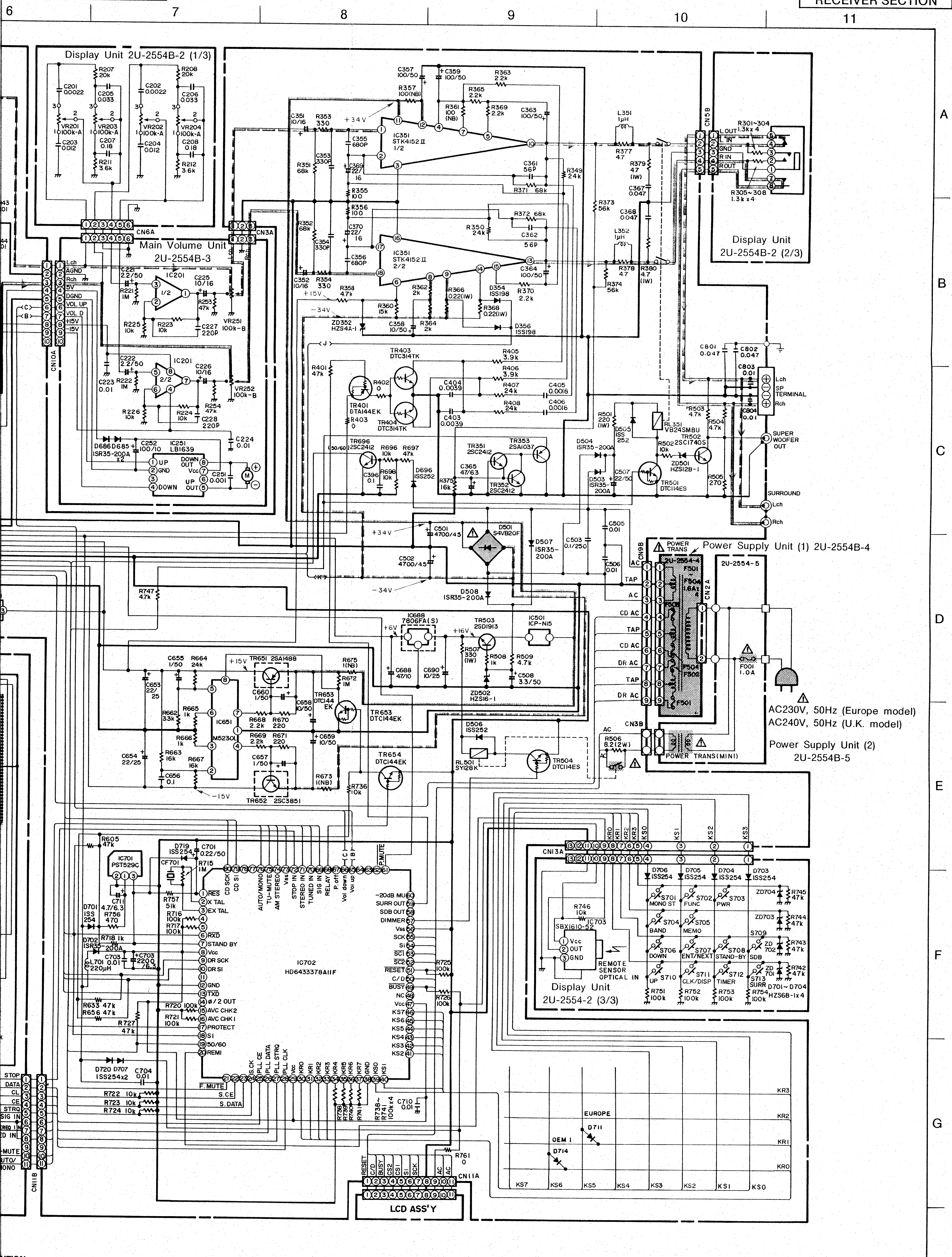
Rch Signal Line
Lch Signal Line
Tuner Rch Signal Line
Tuner Lch Signal Line

+B Line
−B Line
FM Signal Line
AM Signal Line

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics. Use ONLY replacement parts recommended by the manifacturer.

CAUTION:
Before returning the unit to the c
leakage current exceeds 0.5 milli
defective.

WARNING
DO NOT return the unit to the cus


6
7
8
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10
11
A
B
C
D
E
F
G
Display Unit 2U-2554B-2 (1/3)
Main Volume Unit 2U-2554B-3
Display Unit 2U-2554B-2 (2/3)
Power Supply Unit (1) 2U-2554B-4
2U-2554-5
Power Supply Unit (2) 2U-2554B-5
Display Unit 2U-2554-2 (3/3)
LCD ASS'Y
IC351 STK4152 II 1/2
IC351 STK4152 II 2/2
IC201
IC251 LB1639
IC651 M5230L
IC688 7806FA(S)
IC501 ICP-N15
IC701 PST529C
IC702 HD6433378A11F
IC703 SBX1610-52
CN6A
CN3A
CN10A
CN5B
CN9B
CN2A
CN3B
CN13A
CN11A
CN11B
SP TERMINAL
SUPER WOOFER OUT
SURROUND
POWER TRANS
POWER TRANS(MINI)
AC230V, 50Hz (Europe model)
AC240V, 50Hz (U.K. model)
F001 1.0A
REMOTE SENSOR OPTICAL IN
EUROPE
OEM I

UTION:
ore returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the kage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is ective.

RNING
NOT return the unit to the customer until the problem is located and corrected.

NOTES
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

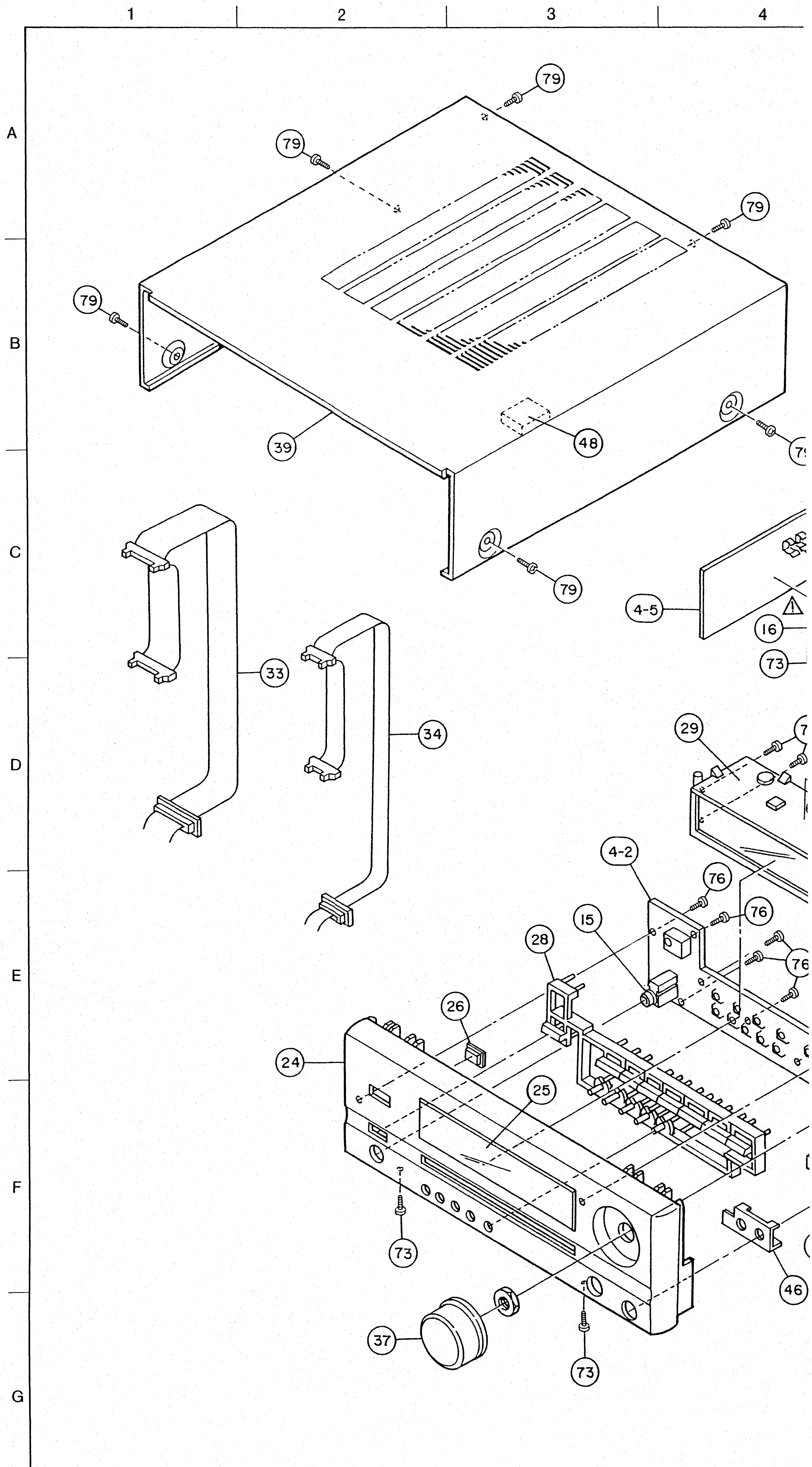
H

RECEIVER SECTION

EXPLODED VIEW

PARTS LIST OF UDRA-65 EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	2U- 2555 B	Tuner Unit Ass'y		1^S
2	216 0093 007	FM Front End(U)	FE001	1
3	205 0776 007	3 P Ant. Terminal(PAL)		1
◉ 4	2U- 2554 B	Main Unit Ass'y		1^S
4-1	—	Main Uuit		(1)
4-2	—	Display Unit		(1)
4-3	—	Main Volume Unit		(1)
4-4	—	Power Supply Unit (1)		(1)
4-5	—	Power Supply Unit (2)		(1)
5	254 4424 700	Chemicon 4700μF/45 V	C-501,502	2
6	214 0166 006	Relay(SY-128-K)	RL501	1
7	211 0749 107	Variable Resistor 100k ohm	Main	1
8	211 0796 008	Variable Resistor 100k ohm	Tone	2
⚠ 9	206 1015 029	Fuse 1 A T	F001	1
⚠ 10	206 1015 058	Fuse 1.6 A	F501～504	4
11	205 0592 003	4 P Push Terminal		1
12	204 8439 000	3 P Pin Jack		1
13	204 8436 003	6 P Pin Jack		1
14	204 8421 005	Mini Jack		1
15	204 8437 002	Headphone Jack		1
⚠ 16	233 6050 007	Power Trans(Mini)		1
◉ 17	411 9115 028	:Main Chassis		1
18	124 0079 007	Felt Sheet		4
19	417 0482 004	Radiator		1
◉ 20	412 3671 105	Trans Bracket		1
◉ 21	412 2814 028	Card Spacer(L=10)		2
◉ 22	412 3470 102	Spring Plate		1
⚠ 23	233 6046 105	Power Trans		1
◉ 24	146 1447 201	Front Panel		1
25	143 0841 003	Window		1
26	143 0504 007	Remocon Window		1
◉ 27	412 2741 036	P.W.B. Holder(H=10)		2
28	113 1585 105	Function Button		1
◉ 29	393 6001 002	LCD Ass'y		1
⚠ 30	445 0056 008	Cord Bush		1
⚠ 31	206 2091 000	:AC Cord w/Conn.		1
◉ 32	105 1081 116	Rear Panel		1
◉ 33	204 2586 001	15 P System Conn. Cord		1
◉ 34	204 2587 000	9 P System Conn. Cord		1
★ 35	445 0033 005	Wire Clamp Band		3
36	205 0752 005	Short Pin		2
◉ 37	112 0707 127	Main Volume Knob Ass'y		1
◉ 38	112 0729 105	Knob		2
◉ 39	102 0537 028	Top Cover		1
★ 40	513 2119 000	Rating Sheet		1
41	—	—		
42	205 0536 085	7 P Conn. Socket	Tuner Unit	1
43	205 0536 098	11 P Conn. Socket	Tuner Unit	1
44	214 0154 005	Relay(VB24SMBU)		1
45	461 0758 049	Rubber Sheet	10×10×T6	1
46	415 0702 102	Shield Plate		1
47	461 0415 007	Rubber Sheet	10×12×T2	1
48	461 0665 019	Rubber Sheet		1
★ 49	513 2171 006	Honologation Label		1
◉ 50	412 3708 201	Earth Plate		1
SCREWS				
71	473 7500 044	Tapping Screw (P) 3×8	Black	3
72	473 7007 000	Tapping Screw (S) 4×8	Black	9
73	473 7002 021	Tapping Screw (S) 3×8	Black	7
74	473 3823 000	Tapping Screw (1) 3×20	Black with W.	2
75	473 8007 025	Cup Screw 3×8		2
76	473 7505 007	Tapping Screw (P) 2.6×8		12
77	—	—		
78	477 0064 107	Fixing Screw		7
79	473 7015 018	Tapping Screw (S) 3×8	Black	10
80				
81				
82				
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	505 0241 005	Cabinet Cover		1
102	503 1090 000	:Cushion		1
103				
104				

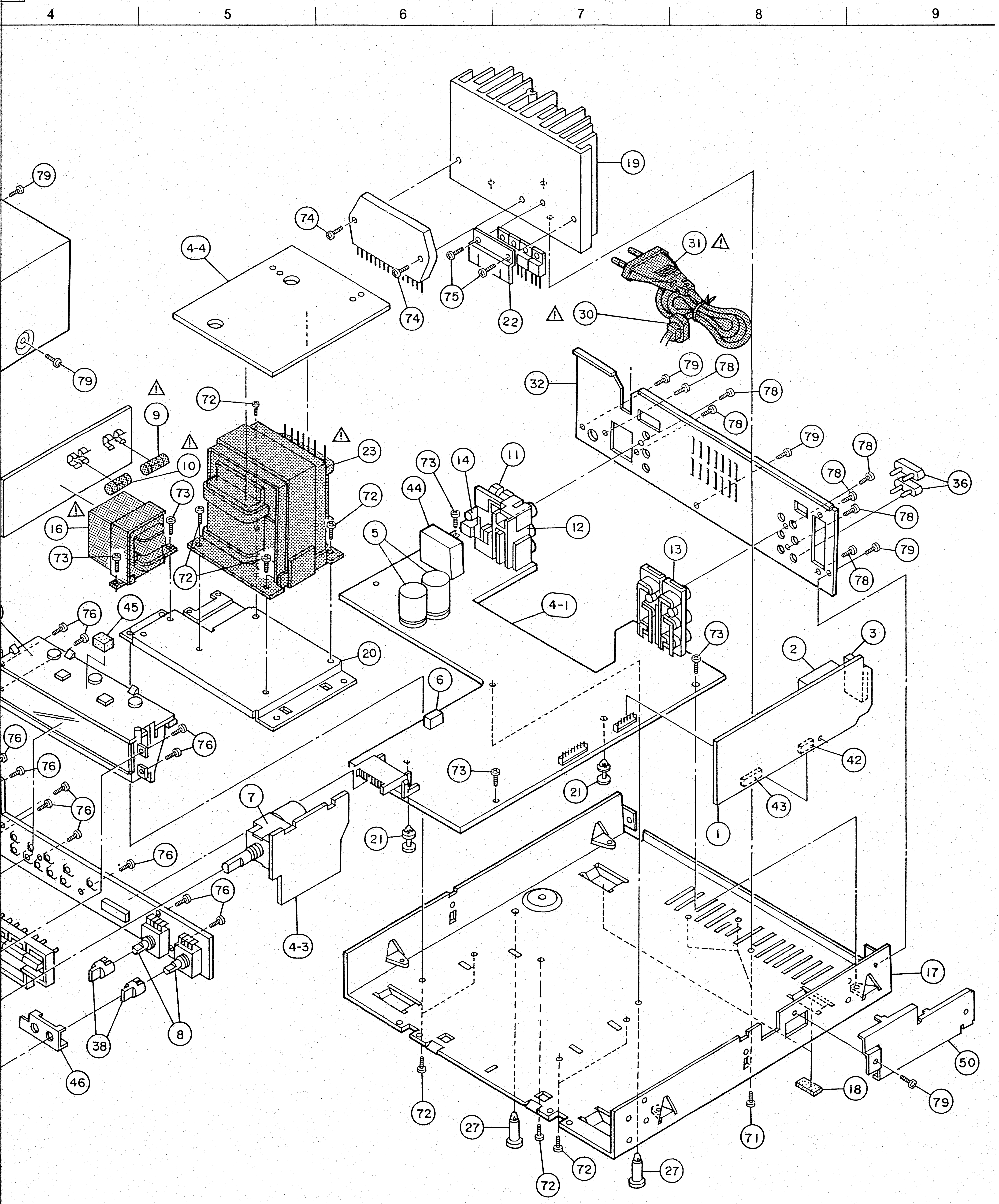


NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

EW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4-1
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45
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20
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6
1
42
43
76
76
76
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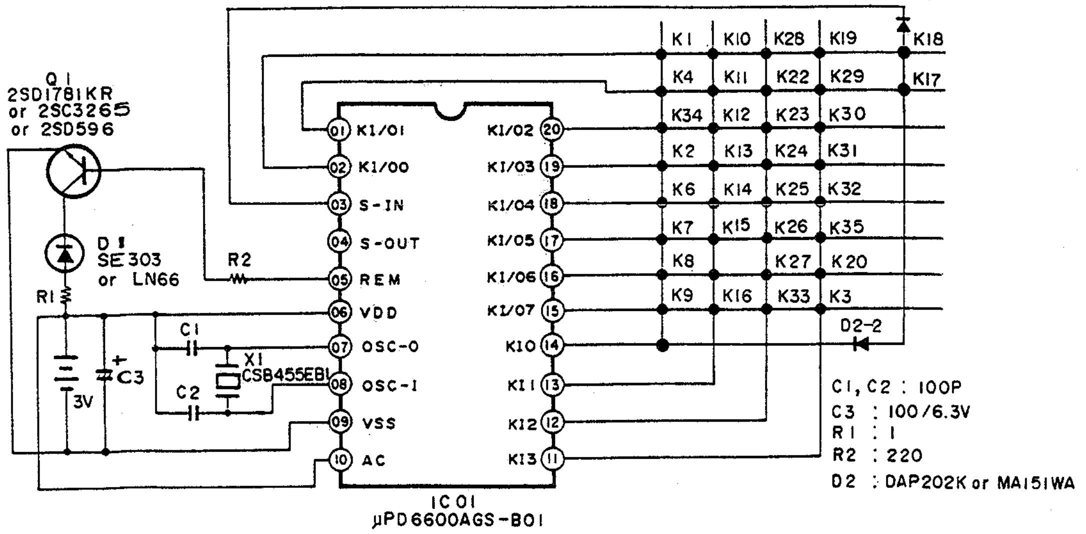
ng, or in some case

● Schematic Diagram


D2-1
K1
K10
K28
K19
K18
K4
K11
K22
K29
K17
K34
K12
K23
K30
K2
K13
K24
K31
K6
K14
K25
K32
K7
K15
K26
K35
K8
K27
K20
K9
K16
K33
K3
D2-2
Q1
2SD1781KR
or 2SC3265
or 2SD596
D1
SE303
or LN66
R1
R2
C1
C2
+C3
3V
X1
CSB455EB1
01 K1/01
02 K1/00
03 S-IN
04 S-OUT
05 REM
06 VDD
07 OSC-0
08 OSC-I
09 VSS
10 AC
K1/02 20
K1/03 19
K1/04 18
K1/05 17
K1/06 16
K1/07 15
K10 14
K11 13
K12 12
K13 11
IC01
µPD6600AGS-B01
C1, C2 : 100P
C3 : 100/6.3V
R1 : 1
R2 : 220
D2 : DAP202K or MA151WA

NOTES
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

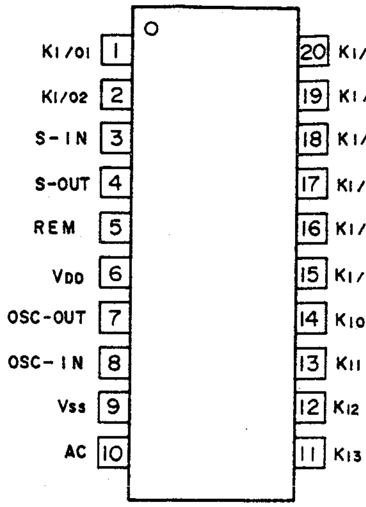
Tuner Mode

After sending the tuner (K5) key and immediately after inserting the batteries, K6 through K16 are to send the tuner number keys and the + number key codes.

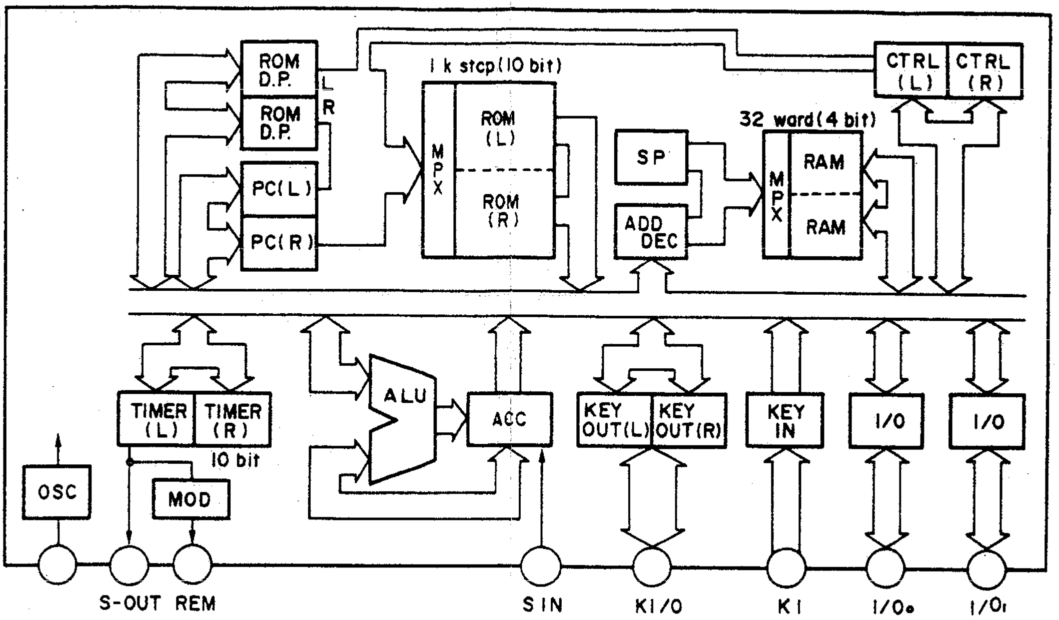
Key	System Address					Data Code						Expansion		Mask	Judgment	Registration	Notes
No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	K	code	
1	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0		POWER
2	0	0	1	1	0	0	1	0	0	1	1	1	0	0	0		SLEEP
3	0	0	1	1	0	1	1	0	1	0	0	1	0	0	0		MUTE
4	0	0	1	1	0	1	1	1	1	1	0	1	0	0	0		FUNCTION
5	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0		TUNER
6	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0		1 (DRA mode)
7	0	0	1	1	0	1	1	0	0	0	0	1	0	0	0		2 ↑
8	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0		3 ↑
9	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0		4 ↑
10	0	0	1	1	0	0	1	1	0	0	0	1	0	0	0		5 ↑
11	0	0	1	1	0	1	1	1	0	0	0	1	0	0	0		6 ↑
12	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0		7 ↑
13	0	0	1	1	0	1	0	0	1	0	0	1	0	0	0		8 ↑
14	0	0	1	1	0	1	1	0	0	0	1	1	0	0	0		9 ↑
15	0	0	1	1	0	0	0	1	0	0	1	1	0	0	0		10 ↑
16	0	0	1	1	0	1	1	1	1	0	1	1	0	0	0		+10 ↑
17	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0		DIRECT
18	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0		PROGRAM
19	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0		CANCEL
20	0	0	1	1	0	1	0	1	1	0	0	1	0	0	0		VOL UP
21	0	0	1	1	0	0	0	1	1	0	0	1	0	0	0		VOL DOWN
22	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0		R. PLAY ◀
23	0	0	1	0	0	0	1	1	1	1	0	1	0	0	0		STOP ■
24	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0		F. PLAY ▶
25	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0		REW ◀◀
26	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0		FF ▶▶
27	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0		REC/REC MUTE
28	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0		TAPE 1/2
29	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0		STOP ■
30	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0		PLAY ▶
31	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0		M-SEARCH L ◀◀
32	0	0	0	1	0	0	1	0	1	1	0	1	0	0	0		M-SEARCH R ▶▶
33	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0		DISC
34																	GEQ
35	0	0	0	1	0	0	1	0	1	0	1	1	1	0	0		SDB

● IC

µPD6600AGS-B01
Pin Connections Diagram (Top View)

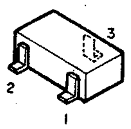

K1/01 1
K1/02 2
S-IN 3
S-OUT 4
REM 5
VDD 6
OSC-OUT 7
OSC-IN 8
Vss 9
AC 10
20 K1/02
19 K1/03
18 K1/04
17 K1/05
16 K1/06
15 K1/07
14 K10
13 K11
12 K12
11 K13

Block Diagram


ROM D.P.
ROM D.P.
L
R
PC(L)
PC(R)
1 k step(10 bit)
MPX
ROM (L)
ROM (R)
SP
ADD DEC
32 word(4 bit)
MPX
RAM
RAM
CTRL (L)
CTRL (R)
TIMER (L)
TIMER (R)
10 bit
ALU
ACC
KEY OUT(L)
KEY OUT(R)
KEY IN
I/O
I/O
OSC
MOD
S-OUT
REM
S IN
K1/0
K1
I/O0
I/O1

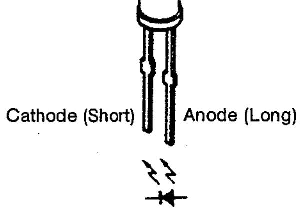
● Transistors

2SD1781KR
2SC3265
2SD596

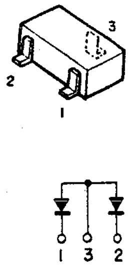


● Diodes

Infrared LED
SE303


Cathode (Short)
Anode (Long)

DAP202K
MA151WA



CD Mode

After sending the direct (K17) or program (K18) key, K6 through K16 are to send the CD number keys and the + number key codes.

Key	System Address					Data Code						Expansion		Mask	Judgment	Registration	Notes
No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	K	code	
6	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0		1
7	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0		2
8	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0		3
9	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0		4
10	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0		5
11	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0		6
12	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0		7
13	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0		8
14	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0		9
15	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0		10
16	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0		+10

GEQ Mode

After the K34 key is switched on, the K6 through K10 keys send the code for GEQ, but K11 through K16 must not send anything.

Key	System Address					Data Code						Expansion		Mask	Judgment	Registration	Notes
No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	K	code	
6	0	0	0	1	0	0	1	1	1	0	1	1	1	0	0		AV FUNC
7	0	0	0	1	0	0	1	0	0	0	0	1	1	0	0		PEQ
8	0	0	0	1	0	1	1	1	0	0	0	1	1	0	0		UEQ
9	0	0	0	1	0	1	1	1	1	0	0	1	1	0	0		FLAT
10	0	0	0	1	0	0	1	1	0	0	1	1	1	0	0		SE
11	0	0	0	1	0												
12	0	0	0	1	0												
13	0	0	0	1	0												
14	0	0	0	1	0												
15	0	0	0	1	0												
16	0	0	0	1	0												

Tuner Mode

After sending the tuner (K5) key and immediately after inserting the batteries, K6 through K16 are to send the tuner number keys and the + number key codes.

Key	System Address					Data Code						Expansion		Mask	Judgment	Registration	Notes
No.	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	K	code	
6	0	0	1	1	0	0	1	0	0	0	0						1 (DRA mode)
7	0	0	1	1	0	1	1	0	0	0	0						2 ↑
8	0	0	1	1	0	0	0	1	0	0	0						3 ↑
9	0	0	1	1	0	1	0	1	0	0	0						4 ↑
10	0	0	1	1	0	0	1	1	0	0	0						5 ↑
11	0	0	1	1	0	1	1	1	0	0	0						6 ↑
12	0	0	1	1	0	0	0	0	1	0	0						7 ↑
13	0	0	1	1	0	1	0	0	1	0	0						8 ↑
14	0	0	1	1	0	1	1	0	0	0	1						9 ↑
15	0	0	1	1	0	0	0	1	0	0	1						10 ↑
16	0	0	1	1	0	1	1	1	1	0	1						+10 ↑

CD PLAYER SECTION

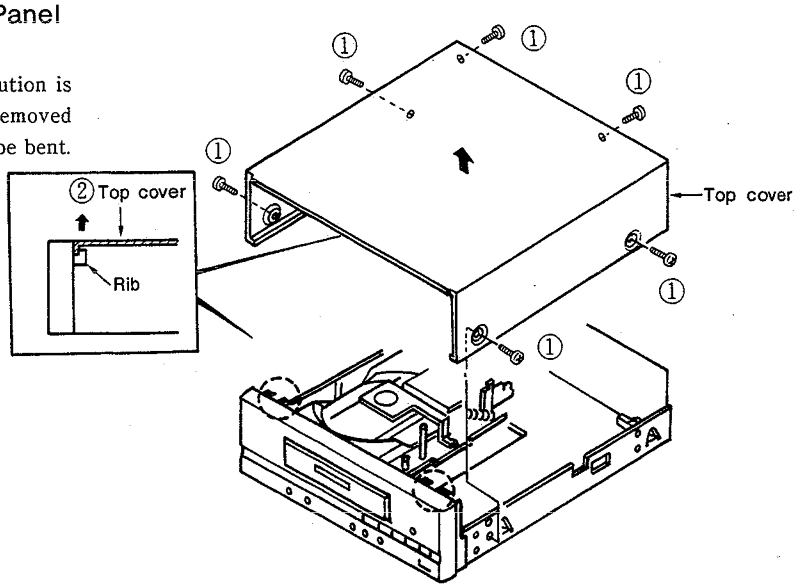
DISASSEMBLY PROCEDURES

(Follow these procedures in reverse order to reassemble.)

. Removing the Top Cover and the Front Panel

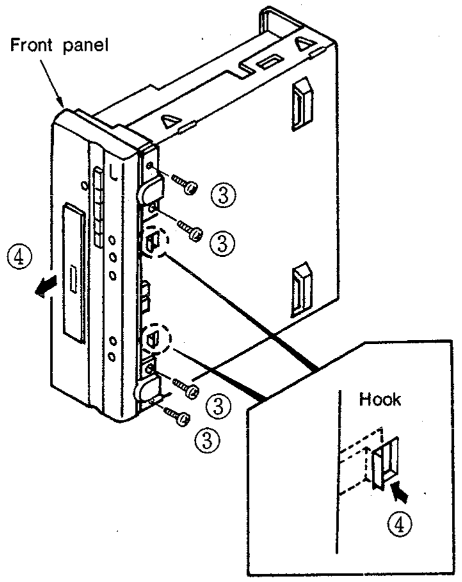
) Remove the six screws that fasten the top cover.

) The top cover is held in the rib of the front panel. Caution is required when taking off the top cover since if it is not removed in the direction of the arrow (vertically), the rib might be bent.


①
①
①
①
①
①
①
②Top cover
Rib
Top cover

③ Remove the four screws that fasten the front panel.

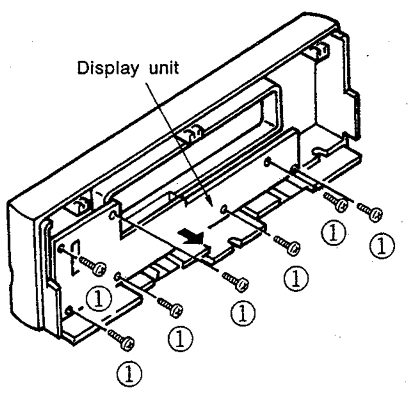
④ While releasing the hooks of the front panel from the chassis, remove the front panel in the direction of the arrow.


Front panel
③
③
④
③
③
Hook
④

2. Removing the Various Units

Display Unit (2U-2557-2)

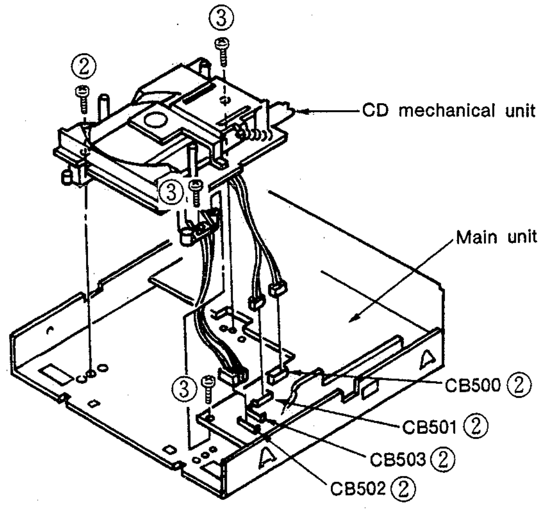
① Remove the seven screws which fasten the display unit.


Display unit
①
①
①
①
①
①
①

3. Removing the CD Mechanical Unit

② Disconnect the BC500, 501, 502, and 503 connectors which are attached to themain board.

③ Remove the four screws which fasten the CD mechanical unit, then remove the mechanical unit in the direction of the arrow.


③
②
CD mechanical unit
③
Main unit
③
CB500 ②
CB501 ②
CB503 ②
CB502 ②

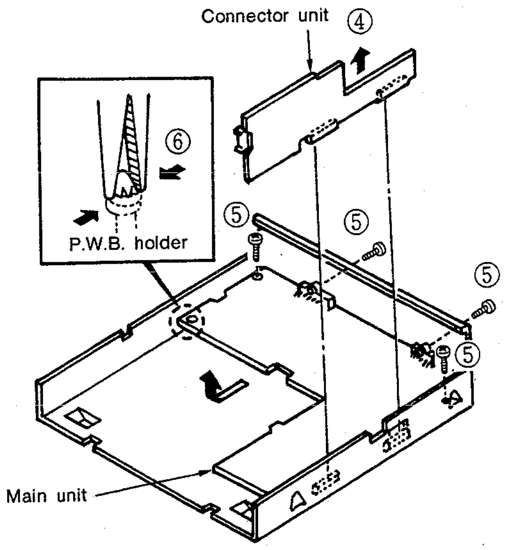
Connector Unit (2U-2557-3)

④ Pull off the connector unit from the connectors in the direction of the arrow.

Main Unit (2U-2557-1)

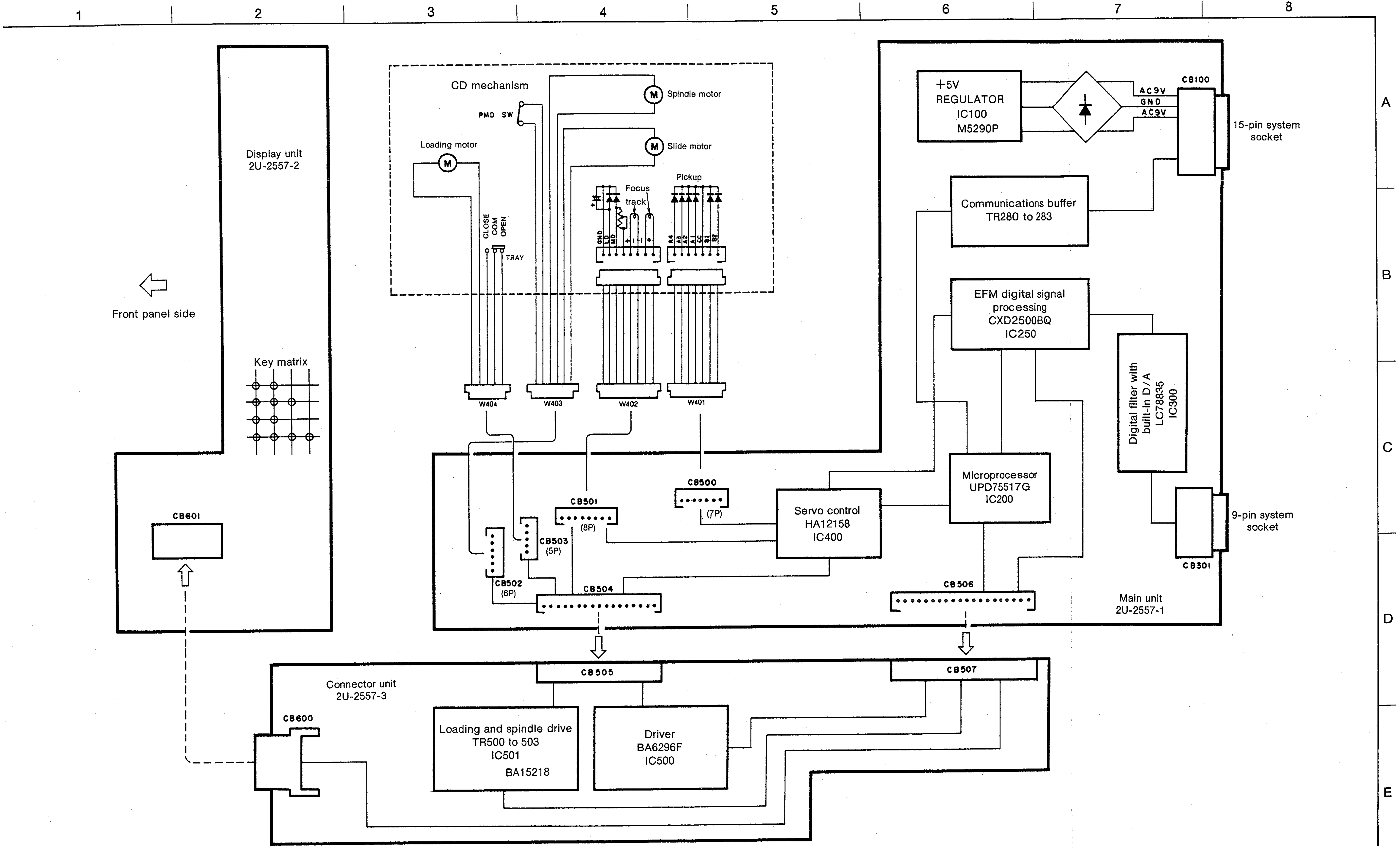
⑤ Remove the four screws which fasten the main unit.

⑥ While removing the P.W.B. holder with pliers, remove the main unit in the direction of the arrow.

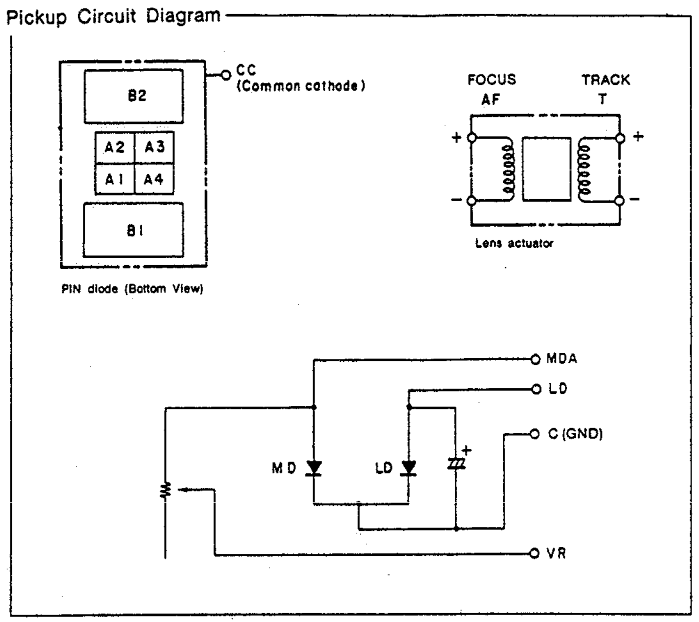

Connector unit ④
⑥
P.W.B. holder
⑤
⑤
⑤
⑤
Main unit

BLOCK DIAGRAM

CD PLAYER SECTION

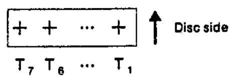

1
2
3
4
5
6
7
8
A
B
C
D
E
Front panel side
Display unit
2U-2557-2
Key matrix
CB601
CD mechanism
PMD SW
Loading motor
M
CLOSE
COM
OPEN
TRAY
Spindle motor
Slide motor
Focus
track
Pickup
GND
LD
MD
A4
A3
A2
A1
CC
B1
B2
W404
W403
W402
W401
CB500
(7P)
CB501
(8P)
CB503
(5P)
CB502
(6P)
CB504
Servo control
HA12158
IC400
Microprocessor
UPD75517G
IC200
+5V
REGULATOR
IC100
M5290P
AC9V
GND
AC9V
CB100
15-pin system socket
Communications buffer
TR280 to 283
EFM digital signal processing
CXD2500BQ
IC250
Digital filter with built-in D/A
LC78835
IC300
9-pin system socket
CB301
CB506
Main unit
2U-2557-1
CB505
CB507
Connector unit
2U-2557-3
CB600
Loading and spindle drive
TR500 to 503
IC501
BA15218
Driver
BA6296F
IC500

Connections Diagram



1. PD connector

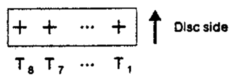
PH pin post 7 pins (Type number B7B-PH-K-S manufactured by Nippon Atchaku Tanshi Hanbai K.K.)



Tn	1	2	3	4	5	6	7
Item	A_4	A_3	A_2	A_1	CC	B_1	B_2

2. LD actuator connector

PH pin post 8 pins (Type number B8B-PH-K-S manufactured by Nippon Atchaku Tanshi Hanbai K.K.)



Tn	1	2	3	4	5	6	7	8
Item	C (GND)	LD	MD	-VR	TR+	TR−	AF−	AF+

LASER PICKUP

● Precautions in Handling

This mechanism has been precisely assembled and adjusted at a special factory. It should not be disassembled or adjusted without good reason. Pay attention to the following points related to handling.

1. General items

(1) Storage

Avoid storage in places with high temperatures and high humidity, and in places exposed to a lot of dust.

(2) Handling

The unit has been precisely adjusted and care should be taken so as not to expose the unit to shocks through dropping or careless handling.

2. Semiconductor laser (LD)

(1) Protection of the eyes from the laser

The output of the LD is via an objective lens and is a maximum of 400 μW, but reaches approximately 1.3×10^4W/cm^2 in places where there is condensed light. After being condensed by the objective lens, the beam widens and so is all right at a distance of 30 cm or further, but during operation the LD should never be allowed to be viewed directly or through another lens or mirror since this is dangerous.

(2) Destruction by surge currents or static electricity

When a large current flows through the LD, even for a very short period, the strong light which the LD generates itself will advance the deterioration of the LD or destroy it.

Wire a switch into the LD drive circuit or provide another method of preventing the flow of surge currents. Also, when handled without care, the LD can be destroyed instantly by the application of static electricity from the body. Therefore, when handling the LD, be sure to ground your body and ground the measuring instruments, jigs, and tools. It is also desirable to use a grounding mat on the work bench and floor.

3. Lens actuator

The actuator section uses a strong magnetic circuit, so that when magnetic bodies come too close, their characteristics are altered. Also be careful not to allow foreign matter to enter from the cover gap.

4. Handling

Be sure not to contact the lens when handling the LD.

Note that direct contact of the body or other objects with the circuit of the LD board will cause deterioration to occur, so sufficient care should be takenNote that a poor connection related to the LD and actuator connector will cause deterioration of the laser, and so there should not be any looseness of connectors.

SERVICE POINTS

1. Parts replacement of the tray mechanism (Figs. 1 and 2)

(1) Removal of the tray

Open the tray and use a flat-bladed screwdriver to press the stopper portions of Fig. 1 (one each in the left and right locations) in the direction of the black arrow, then remove in the direction of the white arrow.

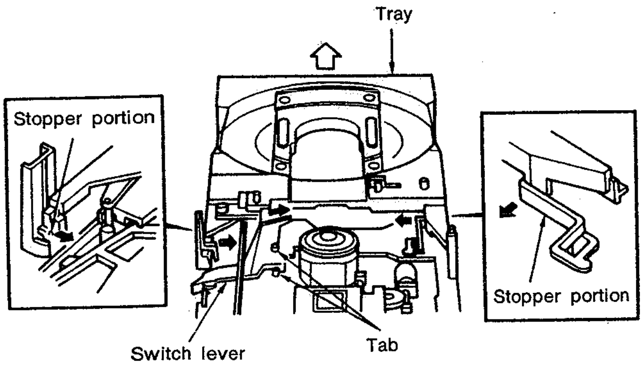

Tray
Stopper portion
Stopper portion
Switch lever
Tab

Fig. 1

(2) Mounting of the tray (Figs. 1, 2 and 3)

Turn the switch lever in the direction of the arrow, set the latches of the tray as illustrated in Fig. 2, then set the rails of the tray into the grooves of the loading plate. Press so that the pins of the switch lever enter the grooves of the rack, and while bending the stoppers a little to the inside, press in the tray.
(Check that the latches are in the positions illustrated in Fig. 2.)

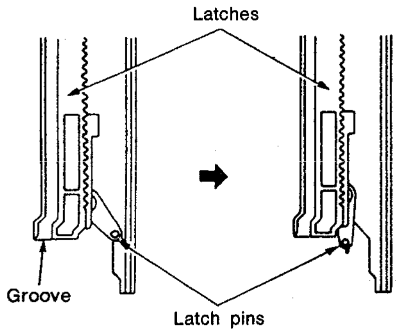

Latches
Groove
Latch pins

Fig. 2

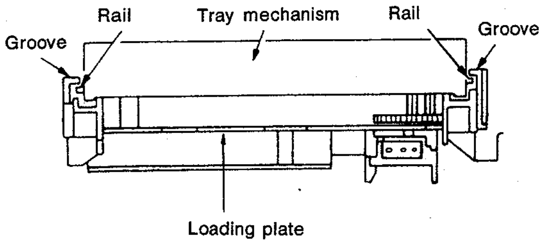

Rail
Tray mechanism
Rail
Groove
Groove
Loading plate

Fig. 3

(3) Replacement of the disc holder (Fig. 4)

With the tray removed, remove tabs Ⓓ and Ⓔ of the disc receptacle of Fig. 4, then lift up and off.

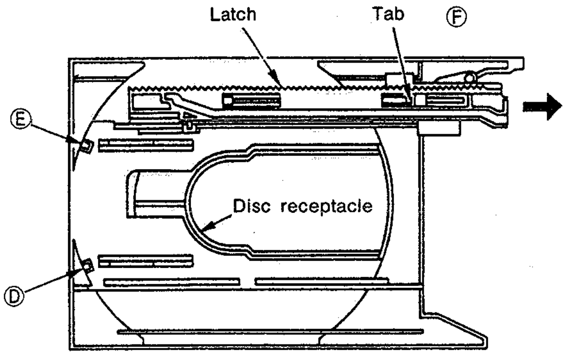

Latch
Tab Ⓕ
Ⓔ
Disc receptacle
Ⓓ

Fig. 4

(4) Replacement of the latches (Fig. 4)

Set the latches into the condition of Fig. 4, lift the latch tab (F) up about 1 mm with a flat-bladed screwdriver and remove the rack in the direction of the arrow.

(5) Replacement of the switch lever (Fig. 1)

Remove the tabs of the bottom side (in 2 locations).

2. Removing the Clamper Arm (Fig. 5)

1) Remove the clamper spring.
2) Press the support spring in the direction of the arrow and remove.
3) Press the hook in the direction of the arrow and remove the shaft of the clamper arm.

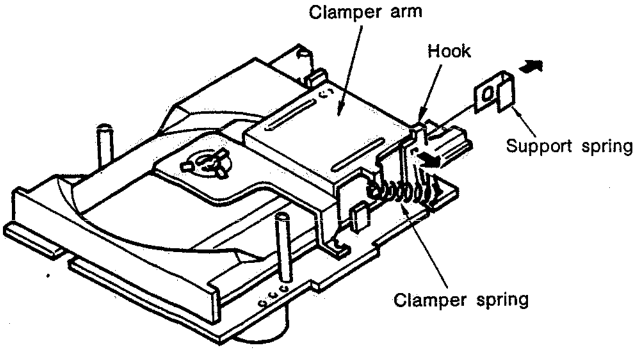

Clamper arm
Hook
Support spring
Clamper spring

Fig. 5

3. Removing the Clamper (Fig. 6)

1) Press one of the clamper tabs to the outside and remove the clamper plate from the tabs.
2) Insert a flat-blade screwdriver into the bottom of the raised clamper plate and at this time remove the other two tabs.
3) Remove the clamper plate and clamper magnet, then press the tabs of the clamper to the inside and remove the clamper through the bottom side.

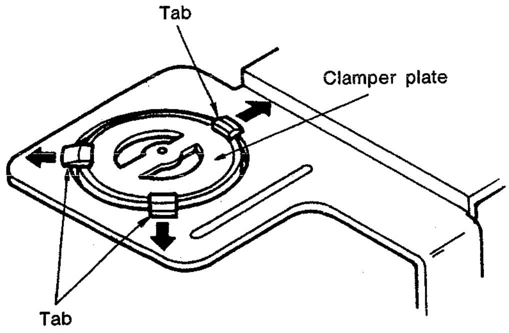

Tab
Clamper plate
Tab

Fig. 6

4. Removing the Pickup (Fig. 7)

Insert a Phillips screwdriver into the crossed indentation of the molded part which fastens the slide bar and turn in the counterclockwise direction.

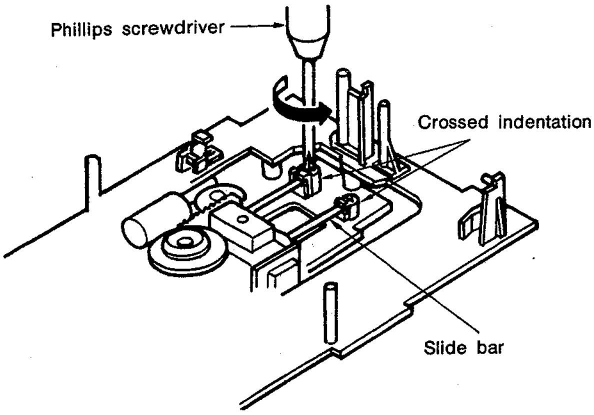

Phillips screwdriver
Crossed indentation
Slide bar

Fig. 7

5. Spindle Motor Assembly Replacement Precautions (Fig. 8)

When replacing the spindle motor assembly leave some slack on the wires of the motor and switch.

Pulling of the wires may cause the sound to skip.

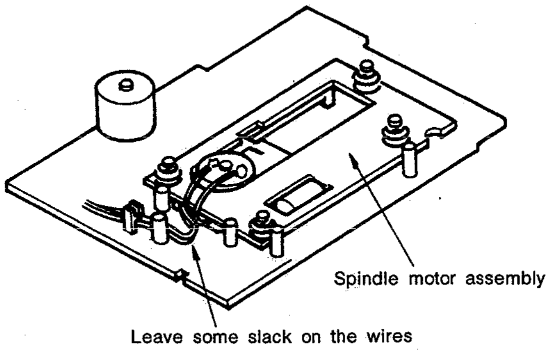

Spindle motor assembly
Leave some slack on the wires

Fig. 8

6. Inspection of the objective lens (Fig. 9)

Handle so as not to get dirt or dust on the objective lens of the lens actuator section. Note that when used for a long period, dirt or dust may have adhered to the objective lens. Try cleaning the surface of the objective lens with a dry, clean cotton swab.

If the dirt still does not come off, moisten the cotton swab with a small amount of water and wipe. When doing this, be careful not to get water on any parts other than the lens.

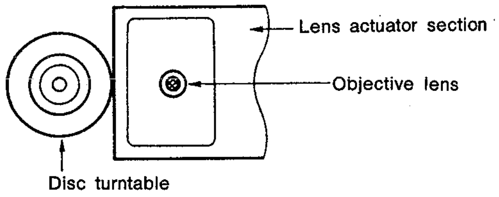

Lens actuator section
Objective lens
Disc turntable

Fig. 9

7. Inspection for laser breakdown

The laser is normally driven with a current of 30 to 80 mA. If this laser drive current value is measured at 120 mA or higher in the circuit, the laser may be thought to be faulty. [The current value is calculated by $\frac{V_1\,(V)}{22\,(\text{ohm})}$ (R426 is taken to be V_1.)]

8. Precautions at time of servicing

(1) *Semiconductor laser (Fig. 10)*

The semiconductor laser is very susceptible to static electricity destruction and surge currents. Be careful never to touch the terminals of the semiconductor laser and the terminals of the flexible board with your hands or a tool.

As illustrated in Fig. 10, the current and light intensity characteristics increase abruptly once the threshold current value is exceeded.

Also note that this threshold current differs a little from laser to laser. In view of this, when replacing the unit mechanism or any work that involves setting the amount of light of the laser, be sure to turn the adjustment control VR400 fully in the counterclockwise direction, and then raise it to the specified value.

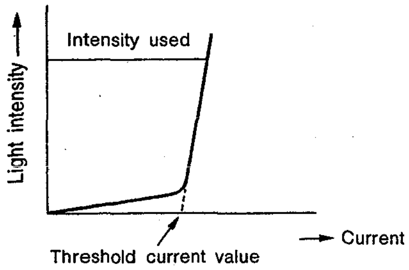


Fig. 10

(2) Handing the unit mechanism (Fig. 11)

When handling the pickup mechanism and the unit mechanism, use a ground ring such as the one illustrated in Fig. 11. (A ground ring can be constructed using ordinary lead wire.)

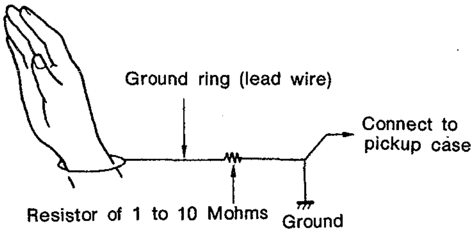


Fig. 11

9. Inspection of the actuator

Check the resistance value of the actuator coil. It is normal if the values are as follows;

Focusing coil .... 30 ohms
Tracking coil .... 10 ohms

When the coil is open or shorted, the actuator may be thought to be damaged.

CD PLAYER SECTION

ADJUSTMENT METHOD

The microprocessor contained in this unit incorporates a service program which allows a wide variety of service adjustments to be conducted easily by using the operation buttons.

1. Method of starting the service program

Switch on the AC power while simultaneously pressing the ▶ PLAY switch and the ⏏ OPEN/CLOSE switch of the CD unit (UCD-65). When all power has been switched on there will be a transition to the service program. At this time the display section of the CD unit (UCD-65) display tube will indicate "01".

2. Operation functions when the service program is operating

Operation button	Operation function	Description
⏏ OPEN/CLOSE	Opens and closes the disc holder.	● Opening and closing takes place when the rotation of the disc has stopped. ● Other operation buttons are performed when the opening and closing operation is completed.
■ STOP	Stops system operation.	● Track number display becomes 01. ● Press when an adjustment has been completed or is redone.
▶ PLAY	Operates the focus servo and rotates the disc.	● Press at the time of the tracking offset adjustment. ● After the operation is completed, the track number display becomes 02.
⏸ PAUSE	Operates the focus servo, tracking servo, slide servo, and the spindle servo.	● When the play button has been pressed, the tracking servo and slide servo are operated. ● After the operation is completed the track number display becomes 03.
Other buttons	Operation is not normal.	● Do not operate buttons other than the above. ● When a button is operated by mistake, immediately turn the power switch off.

NOTE: Do not use the remote control while the service program is operating.

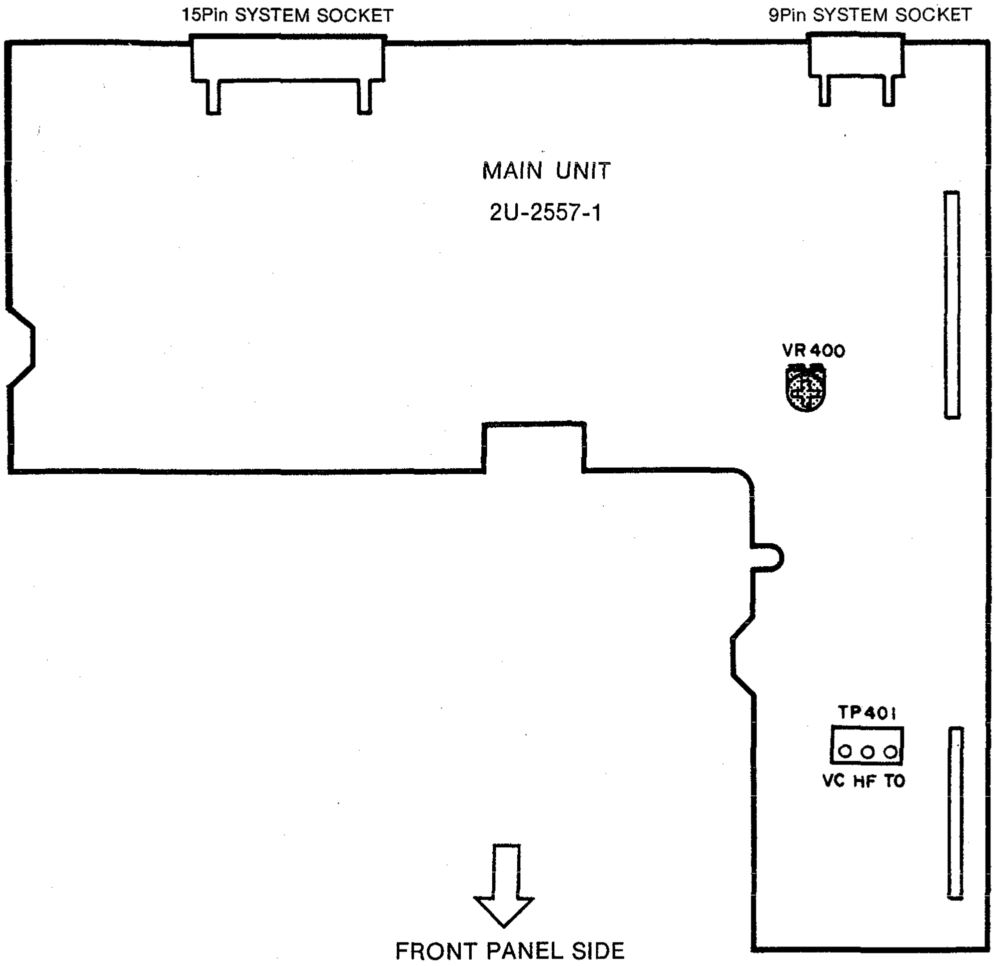
3. Adjustment method

(1) Measuring instruments required in the adjustment

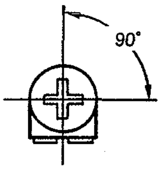
Oscilloscope

OUTLINE DIAGRAM OF ADJUSTMENT LOCATION

2U-2557-1 CD MAIN UNIT ASS'Y


15Pin SYSTEM SOCKET
9Pin SYSTEM SOCKET
MAIN UNIT
2U-2557-1
VR400
TP401
VC HF TO
FRONT PANEL SIDE

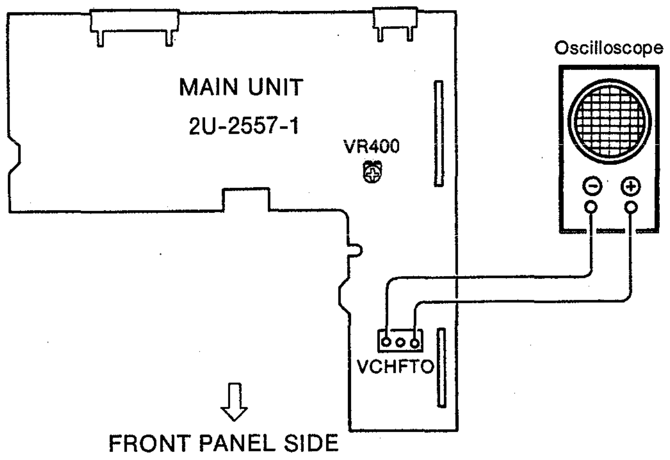
(2) Adjustment preparation

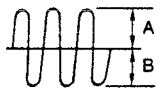
1.	Set the adjustment control (VR400) to the position illustrated.	VR400 (T-OFFSET) 
2.	Adjustment step	1. Tracking offset

CD PLAYER SECTION

(3) Tracking offset adjustment

Wiring Diagram



Oscilloscope (DC range)		Adjustment location	Check items	Adjustment procedure
V	H	(Control)	DC Voltmenter	
0.2V/ div	1~2ms div	VR400	 A=B	1. ⏏ OPEN/CLOSE Press the OPEN/CLOSE button and place an adjustment disc in the disc holder. 2. ⏏ OPEN/CLOSE Press the OPEN/CLOSE button again and close the disc holder. 3. ▶ PLAY Press the PLAY button and check that the display indicates "02". 4. Short the (+) and (−) terminals of the oscilloscope and check the board wiring. 5. Adjust the VR400 "T-OFFSET" control and set the upper and lower amplitude of the waveform to be equal.

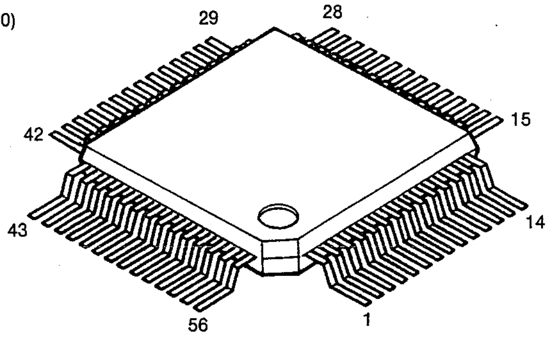
MEMO:

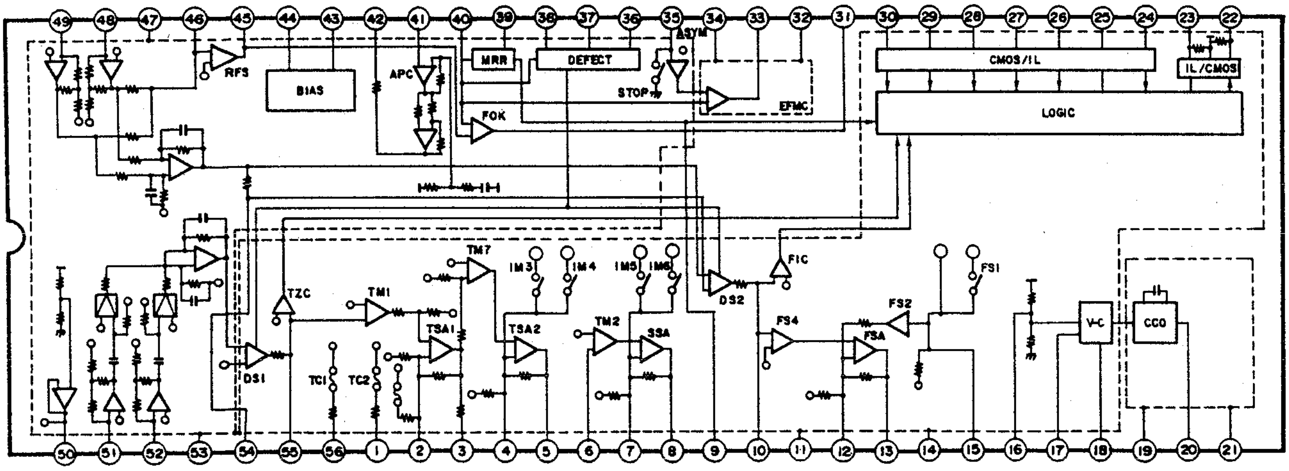
CD PLAYER SECTION

SEMICONDUCTORS

- IC's

HA12158 (IC400)


29
28
15
42
43
14
56
1


RFS
BIAS
APC
MRR
DEFECT
ASYM
STOP
FOK
EFMC
CMOS/IL
IL/CMOS
LOGIC
TM7
IM3
IM4
IM5
IM6
FIC
FS1
TZC
TM1
TSA1
TSA2
TM2
SSA
DS2
FS4
FS2
FSA
V-C
CCO
DS1
TC1
TC2
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
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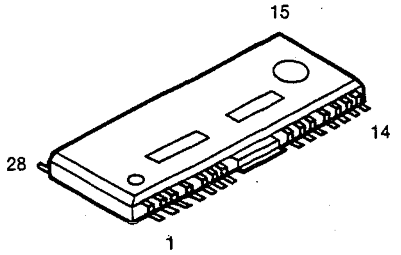
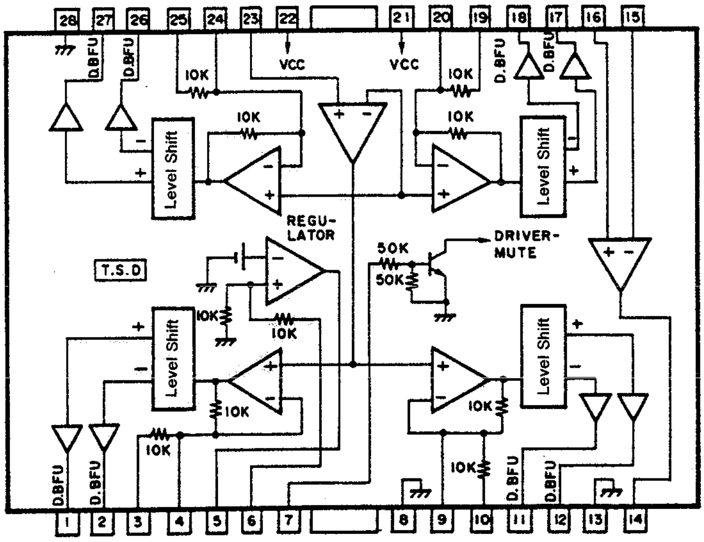
- Pin function table

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	VREF	O	Reference voltage output	29	COUT	O	Track count signal output
2	TR1	I	TR1 (I/V conversion amplifier) input	30	SENS	O	FZC and TZC signal output
3	TR2	I	TR2 (I/V conversion amplifier) input	31	XRST	I	Reset signal output
4	PG	GND	Preamplifier block ground	32	DIRC	I	Direct control signal output
5	FH	O	Focus error hold signal output	33	XLT	I	Data transfer signal input
6	TE	I/O	Track error signal output, TMI input	34	DATA	I	Data signal input
7	TG1	I	TG1 switch	35	CLK	I	Data sync clock input
8	TG2	I	TG2 switch	36	LMSW	I	Limit switch input
9	TS1⊖	I	TSA1 ⊖ input	37	LDSW	I	Laser switch input
10	TS10	O	TSA1 output	38	FOK	O	FOK comparator output
11	TS2⊖	I	TSA2 ⊖ input	39	GEFM	GND	EFM comparator ground
12	TS20	O	TSA2 output	40	EFMC	O	EFM comparator output
13	TM2	I	TM2 input	41	VEFM	Vcc	EFM comparator Vcc
14	SS⊖	I	SSA ⊖ input	42	DSLC	I	Data slice level control input
15	SSO	O	SSA output	43	DFIN	I	Defect comparator input
16	MIRR	O	Mirror comparator output	44	DFO	O	Defect signal output
17	FE	I/O	Focus error signal output, FS4 input	45	DFH	O	Defect hold signal output
18	SG	GND	Servo block ground	46	MIRH	O	Error hold signal output
19	FS⊖	I	SSA ⊖ input	47	EFMI	I	EFM signal output
20	FSO	O	FSA input	48	MD	I	APC amplifier input
21	SVCC	Vcc	Servo block Vcc	49	LD	O	APC amplifier output
22	FUD	O	Focus up/down voltage output	50	BYPS	O	Capacitor connection pin for ripple filter
23	VCR	I/O	VCO reference voltage	51	ISET	O	Reference current setting
24	PDIN	I	VCO control voltage input	52	RFO	O	RFS output
25	FRA	O	VCO free-run frequency setting	53	RF⊖	I	RFS ⊖ input
26	VVcc	Vcc	VCO Vcc	54	PVcc	Vcc	Pre-block Vcc
27	VCO	O	VCO output	55	RF1	I	RF1 (I/V conversion block) input
28	VGND	GND	VCO ground	56	RF2	I	RF2 (I/V conversion block) input

BA6296FP (IC500)




28
27
26
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23
22
21
20
19
18
17
16
15
D.BFU
D.BFU
10K
VCC
VCC
10K
D.BFU
D.BFU
10K
10K
Level Shift
Level Shift
REGU-
LATOR
T.S.D
50K
50K
DRIVER-
MUTE
10K
10K
Level Shift
Level Shift
10K
10K
10K
10K
D.BFU
D.BFU
D.BFU
D.BFU
1
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3
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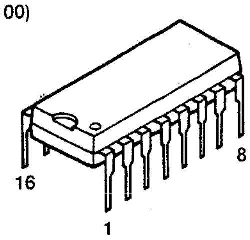
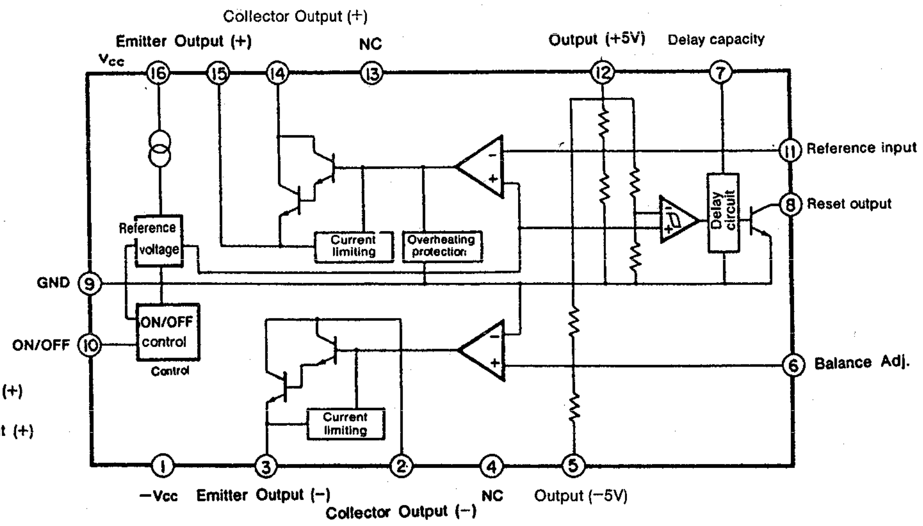
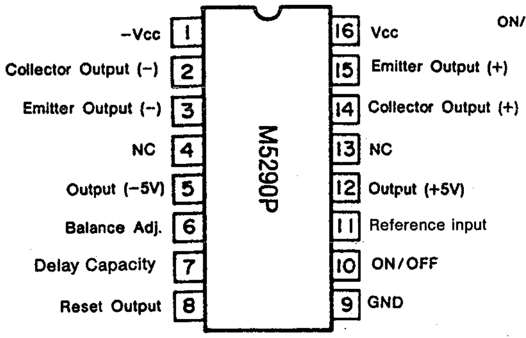
M5290P (IC100)

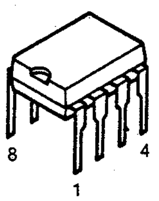


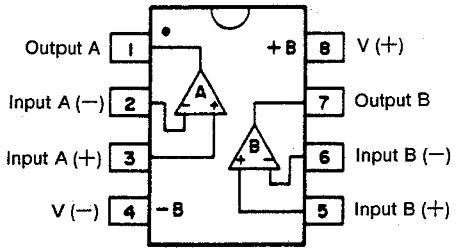

Collector Output (+)
Emitter Output (+)
NC
Output (+5V)
Delay capacity
Vcc
16
15
14
13
12
7
11 Reference input
8 Reset output
Reference voltage
Current limiting
Overheating protection
Delay circuit
GND 9
ON/OFF 10
ON/OFF control
Control
6 Balance Adj.
Current limiting
1
3
2
4
5
−Vcc
Emitter Output (−)
Collector Output (−)
NC
Output (−5V)


−Vcc 1
Collector Output (−) 2
Emitter Output (−) 3
NC 4
Output (−5V) 5
Balance Adj. 6
Delay Capacity 7
Reset Output 8
16 Vcc
15 Emitter Output (+)
14 Collector Output (+)
13 NC
12 Output (+5V)
11 Reference input
10 ON/OFF
9 GND
M5290P

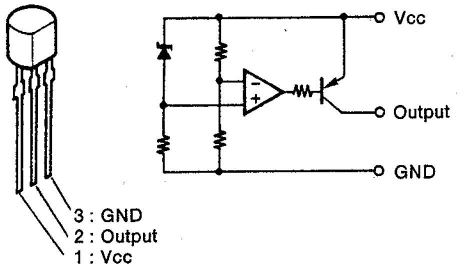
ICP-N15 (IC101~103) IC Protector

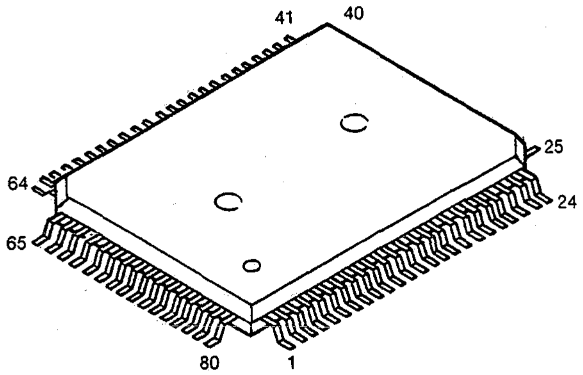
BA15218 (IC501)




Output A 1
Input A (−) 2
Input A (+) 3
V (−) 4
+B
−B
A
B
8 V (+)
7 Output B
6 Input B (−)
5 Input B (+)

PST529C (IC251)


Vcc
Output
GND
3 : GND
2 : Output
1 : Vcc



CXD2500BQFP (IC250)

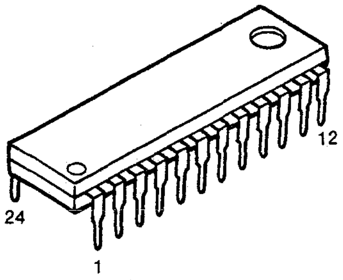
● Pin Function Table

Pin no.	Pin symbol	I/O		Pin description
1	FOK	I		Focus OK input pin. Used in SENS output and the servo auto sequencer.
2	FSW	O	Z,0	Output filter switching output of the spindle motor.
3	MON	O	1,0	On-off control output of the spindle motor.
4	MDP	O	1,Z,0	Servo control of the spindle motor.
5	MDS	O	1,Z,0	Servo control of the spindle motor.
6	LOCK	O	1,0	Samples GFS at 460 Hz. When GFS is "H", H is output. L is output when there is "L", 8 times in succession.
7	NC	—		
8	VCOO	O	1,0	Oscillation circuit output for analog EFM PLL.
9	VCOI	I		Oscillation circuit output for analog EFM PLL. f_{LOCK}=8.6436 MHz.
10	TEST	I		Test pin, always grounded.
11	PDO	O	1,Z,0	For charge pump used with analog EFM PLL.
12	Vss			Ground
13	NC	—		
14	NC	—		
15	NC	—		
16	VPCO	O	1,Z,0	PLL charge pump output used for vari-pitch.
17	VCKI	O		Clock input f_{CENTER} from the external VCO for varipitch equals 16.9344 MHz.
18	FILO	O	Analog	Filter output (slave = digital PLL) for master PLL.
19	FILI	I		Filter input for master PLL.
20	PCO	O	1,Z,0	Charge pump output for master PLL.
21	AVss			Analog ground.
22	CLTV	I		VCO control voltage input for master.
23	AV$_{DD}$			Analog supply (+5 V)
24	RF	I		EFM signal input
25	TEST2	I		Grounded
26	TEST3	I		Grounded
27	ASYO	O	1,0	EFM full-swing output. (L = Vss, H = V$_{DD}$)
28	TEST4	I		Grounded
29	NC	—		
30	PSSL	I		Switching input for the audio data output mode. Serial output with "L" and parallel output with "H".
31	WDCK	O	1,0	D/A interface for 48-bit slot. Word clock f = 2Fs.
32	LRCK	O	1,0	D/A interface for 48-bit slot. LR clock f = Fs.
33	V$_{DD}$			Supply (+5 V)

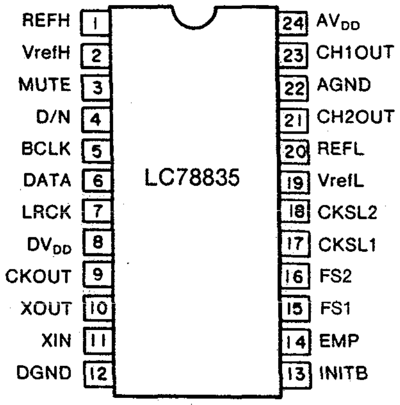
Pin no.	Pin symbol	I/O		Pin description
34	DA16	O	1,0	DA16 (MSB) output when PSSL = 1. Serial data of the 48-bit slot when PSSL = 0. (2s' COMP, MSB first.)
35	DA15	O	1,0	DA15 output when PSSL = 1. Bit clock of the 48-bit slot when PSSL = 0.
36	DA14	O	1,0	DA14 output when PSSL = 1. Serial data of the 64-bit slot when PSSL = 0. (2s' COMP, LSB first.)
37	DA13	O	1,0	DA13 output when PSSL = 1. Bit clock of the 64-bit slot when PSSL = 0.
38	DA12	O	1,0	DA12 output when PSSL = 1. LR clock of the 64-bit slot when PSSL = 0.
39	DA11	O	1,0	DA11 output when PSSL = 1. GTOP output when PSSL = 0.
40	DA10	O	1,0	DA10 output when PSSL = 1. XUGF output when PSSL = 0.
41	DA09	O	1,0	DA09 output when PSSL = 1. XPLCK output when PSSL = 0.
42	DA08	O	1,0	DA08 output when PSSL = 1. GFS output when PSSL = 0.
43	DA07	O	1,0	DA07 output when PSSL = 1. RFCK output when PSSL = 0.
44	DA06	O	1,0	DA06 output when PSSL = 1. C2P0 output when PSSL = 0.
45	DA05	O	1,0	DA05 output when PSSL = 1. XRAOF output when PSSL = 0.
46	DA04	O	1,0	DA04 output when PSSL = 1. MNT3 output when PSSL = 0.
47	DA03	O	1,0	DA03 output when PSSL = 1. MNT2 output when PSSL = 0.
48	DA02	O	1,0	DA02 output when PSSL = 1. MNT1 output when PSSL = 0.
49	DA01	O	1,0	DA01 output when PSSL = 1. MNT0 output when PSSL = 0.
50	APTR	O	1,0	Control output for aperture correction. "H" with Rch.
51	APTL	O	1,0	Control output for aperture correction. "H" with Lch.
52	Vss			Ground
53	XTAI	I		16.9344 MHz x'tal oscillator circuit input. Or 33.8688 MHz input.
54	XTAO	O	1,0	16.9344 MHz x'tal oscillator circuit input.
55	XTSL	I		X'tal selection input pin. "L" when the x'tal is 16.9344 MHz and "H" when the x'tal is 33.8688 MHz.
56	FSTT	O	1,0	2/3 frequency division output of pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	1,0	4.2336 MHz output. Changes simultaneously when varypitch is applied.
58	C16M	O	1,0	16.9344 MHz output. Changes simultaneously when varypitch is applied.
59	MD2	I		Digital-Out on/off control. H when on and L when off.
60	DOUT	O	1,0	Digital-out output pin.
61	EMPH	O	1,0	When the playback disc has emphasis, "H" is output. "L" is output when there is no emphasis.
62	WFCK	O	1,0	WFCK (Write Frame Clock) output.
63	SCOR	O	1,0	"H" output when either sub code sync S0 or S1 is detected.
64	SBSO	O	1,0	Sub P through W serial output.
65	EXCK	I		Clock input for SBSO read-out use.
66	SQSO	O	1,0	SubQ 80 bit and PCM peak level data 16-bit output.
67	SQCK	I		Clock input for SQSO read-out use.
68	MUTE	I		Mute L is cancelled with H.
69	SENS	–	1,Z,0	SENS output. Output to CPU.
70	XRST	I		System set. Reset with "L".
71	DATA	I		Serial data input from CPU.
72	XLAT	I		Latch input from CPU. Latches serial data on the fall.
73	V_{DD}			Supply (+5 V)
74	CLOK	I		Serial data transfer clock input from CPU.
75	SEIN	I		Sense input from SSP.
76	CNIN	O		Count signal input of number of track jumps.
77	DATO	O	1,0	Serial data output to SSP.
78	XLTO	O	1,0	Serial data latch output to SSP. Latches on the fall.
79	CLKO	O	1,0	Serial data transfer clock output to SSP.
80	MIRR	I		Mirror signal input. Used in jumps of 128 tracks or more with an auto sequencer.

CD PLAYER SECTION

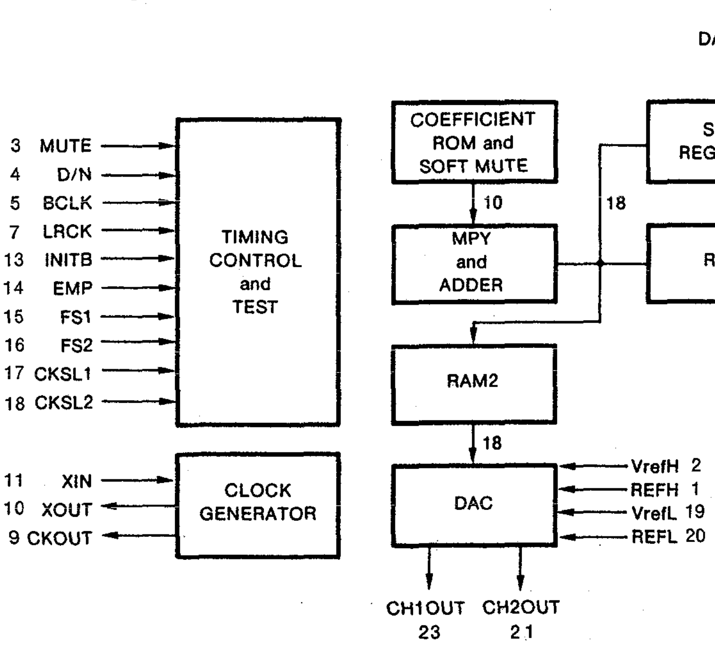
LC78835 (IC300)



Pin Location


LC78835
REFH 1
VrefH 2
MUTE 3
D/N 4
BCLK 5
DATA 6
LRCK 7
DV$_{DD}$ 8
CKOUT 9
XOUT 10
XIN 11
DGND 12
24 AV$_{DD}$
23 CH1OUT
22 AGND
21 CH2OUT
20 REFL
19 VrefL
18 CKSL2
17 CKSL1
16 FS2
15 FS1
14 EMP
13 INITB

Block Diagram

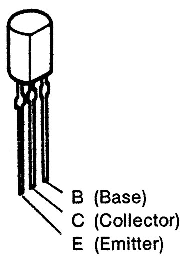

6
DATA
3 MUTE
4 D/N
5 BCLK
7 LRCK
13 INITB
14 EMP
15 FS1
16 FS2
17 CKSL1
18 CKSL2
TIMING CONTROL and TEST
11 XIN
10 XOUT
9 CKOUT
CLOCK GENERATOR
COEFFICIENT ROM and SOFT MUTE
10
MPY and ADDER
SIPO REGISTER
18
RAM1
RAM2
18
DAC
VrefH 2
REFH 1
VrefL 19
REFL 20
CH1OUT 23
CH2OUT 21

- Pin Description

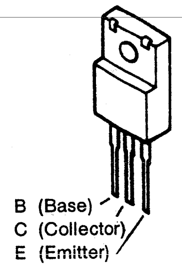
<table>
<tr><td>1</td><td>REFH</td><td>Reference voltage "H" pin
Normally connected to AGND via a capacitor</td></tr>
<tr><td>2</td><td>VrefH</td><td>Reference voltage "H" input pin</td></tr>
<tr><td>3</td><td>MUTE</td><td>Muting signal input pin
Soft muting on at "H"</td></tr>
<tr><td>4</td><td>D/N</td><td>Standard/high speed operation mode switching pin
High speed operation at "H", standard operation at "L"</td></tr>
<tr><td>5</td><td>BCLK</td><td>Bit clock input pin</td></tr>
<tr><td>6</td><td>DATA</td><td>Digital audio data input pin
Input with 2's compliment, MSB first</td></tr>
<tr><td>7</td><td>LRCK</td><td>LR clock input pin
CH1 at "H" and CH2 at "L"</td></tr>
<tr><td>8</td><td>DV_{DD}</td><td>Digital system power supply pin</td></tr>
<tr><td>9</td><td>CKOUT</td><td>Clock output pin
At 392 fs: Clock of 196 fs
At times other than 392 fs: Clock of XIN frequency</td></tr>
<tr><td>10</td><td>XOUT</td><td>Crystal oscillator output pin (system clock output pin)</td></tr>
<tr><td>11</td><td>XIN</td><td>Crystal oscillator output pin (system clock input pin)</td></tr>
<tr><td>12</td><td>DGND</td><td>Digital system ground pin</td></tr>
<tr><td>13</td><td>INITB</td><td>Initialization signal input pin
Initialization performed at "L"</td></tr>
<tr><td>14</td><td>EMB</td><td>De-emphasis filter on/off switching pin
On at "H" and off at "L"</td></tr>
<tr><td>15</td><td>FS1</td><td rowspan="2">Selection pins for the 32 kHz/44.1 kHz/48 kHz modes of the de-emphasis filter
<table>
<tr><td>FS1</td><td>L</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>FS2</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>fs</td><td colspan="2">44.1 kHz</td><td>32 kHz</td><td>48 kHz</td></tr>
</table></td></tr>
<tr><td>16</td><td>FS2</td></tr>
<tr><td>17</td><td>CKSL1</td><td rowspan="2">System clock selection pins
<table>
<tr><td>CKSL1</td><td>CKSL2</td><td>System Clock</td></tr>
<tr><td>L</td><td>L</td><td>384 fs</td></tr>
<tr><td>L</td><td>H</td><td>392 fs</td></tr>
<tr><td>H</td><td>L</td><td>448 fs</td></tr>
<tr><td>H</td><td>H</td><td>512 fs</td></tr>
</table></td></tr>
<tr><td>18</td><td>CKSL2</td></tr>
<tr><td>19</td><td>VrefL</td><td>Reference voltage "L" input pin</td></tr>
<tr><td>20</td><td>REFL</td><td>Reference voltage "L" pin
Normally connected to AGND via a capacitor</td></tr>
<tr><td>21</td><td>CH2OUT</td><td>CH2 analog output pin</td></tr>
<tr><td>22</td><td>AGND</td><td>Analog system ground pin</td></tr>
<tr><td>23</td><td>CH1OUT</td><td>CH1 analog output pin</td></tr>
<tr><td>24</td><td>AV_{DD}</td><td>Analog system power supply pin</td></tr>
</table>

Transistors

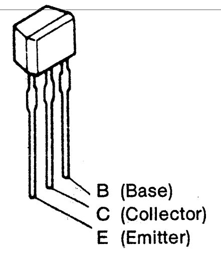
2SA934 (Q)
2SC2060 (Q)



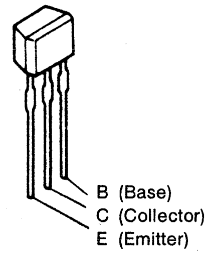
2SB1185 (E/F)



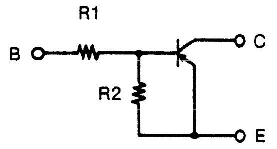
2SA933S (S)
2SD2144S
2SC1740S (S)



DTA114ES } PNP Type
DTA114TS }
DTC114ES } NPN Type
DTC144ES }

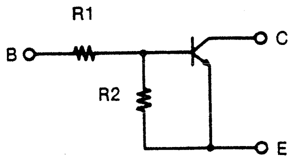


PNP Type



	R1	R2
DTA114ES	10k ohm	10k ohm
DTA114TS	10k ohm	—

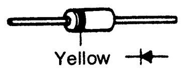
NPN Type



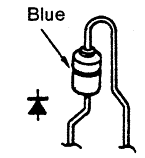
	R1	R2
DTC114ES	10k ohm	10k ohm
DTC144ES	47k ohm	47k ohm

Diodes

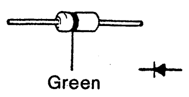
1SS254



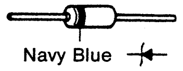
1SR35-200A



1SS198

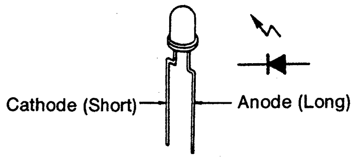


HZS6B-1
HZS6B-2



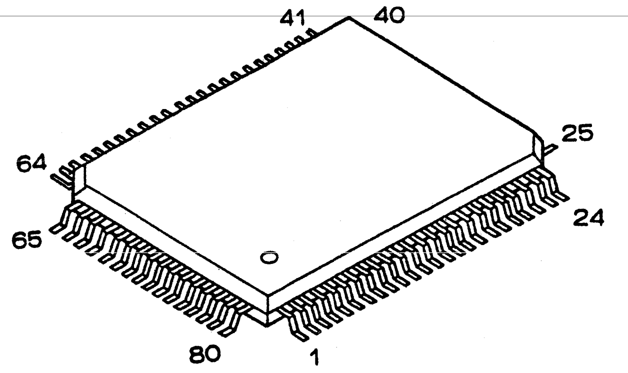
LED ASS'Y

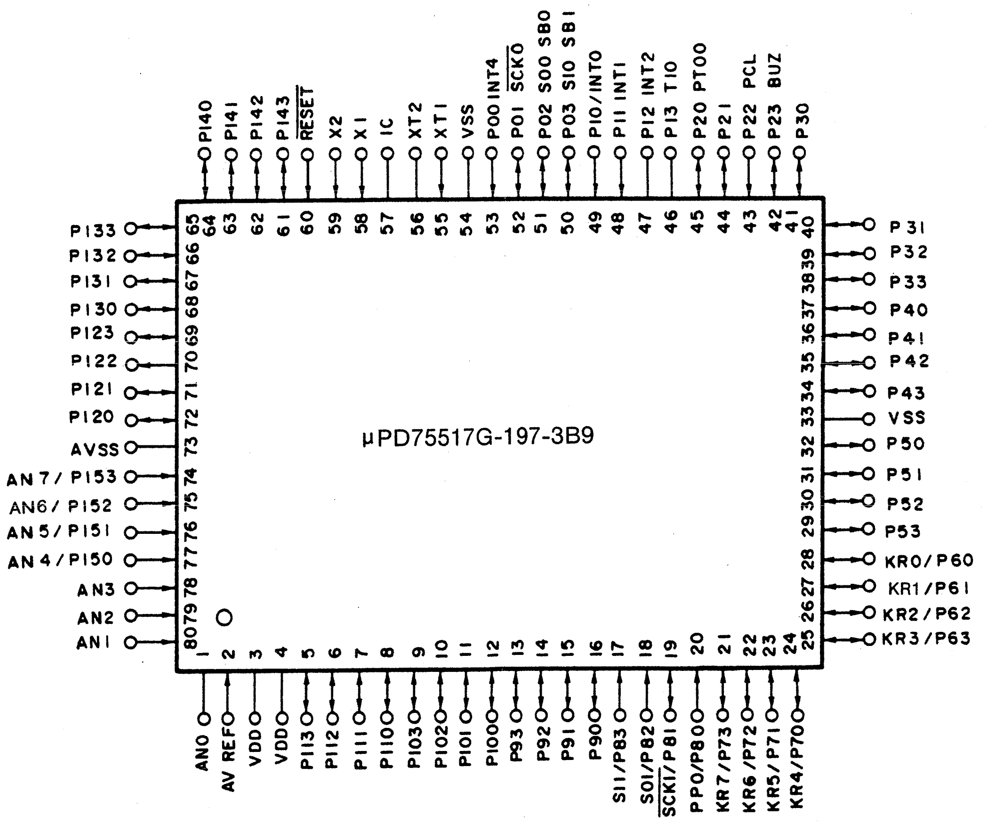
SLR-34MC70F (Green)



MICROPROCESSOR DOCUMENTATION

μPD75517G-197-3B9 (IC200)

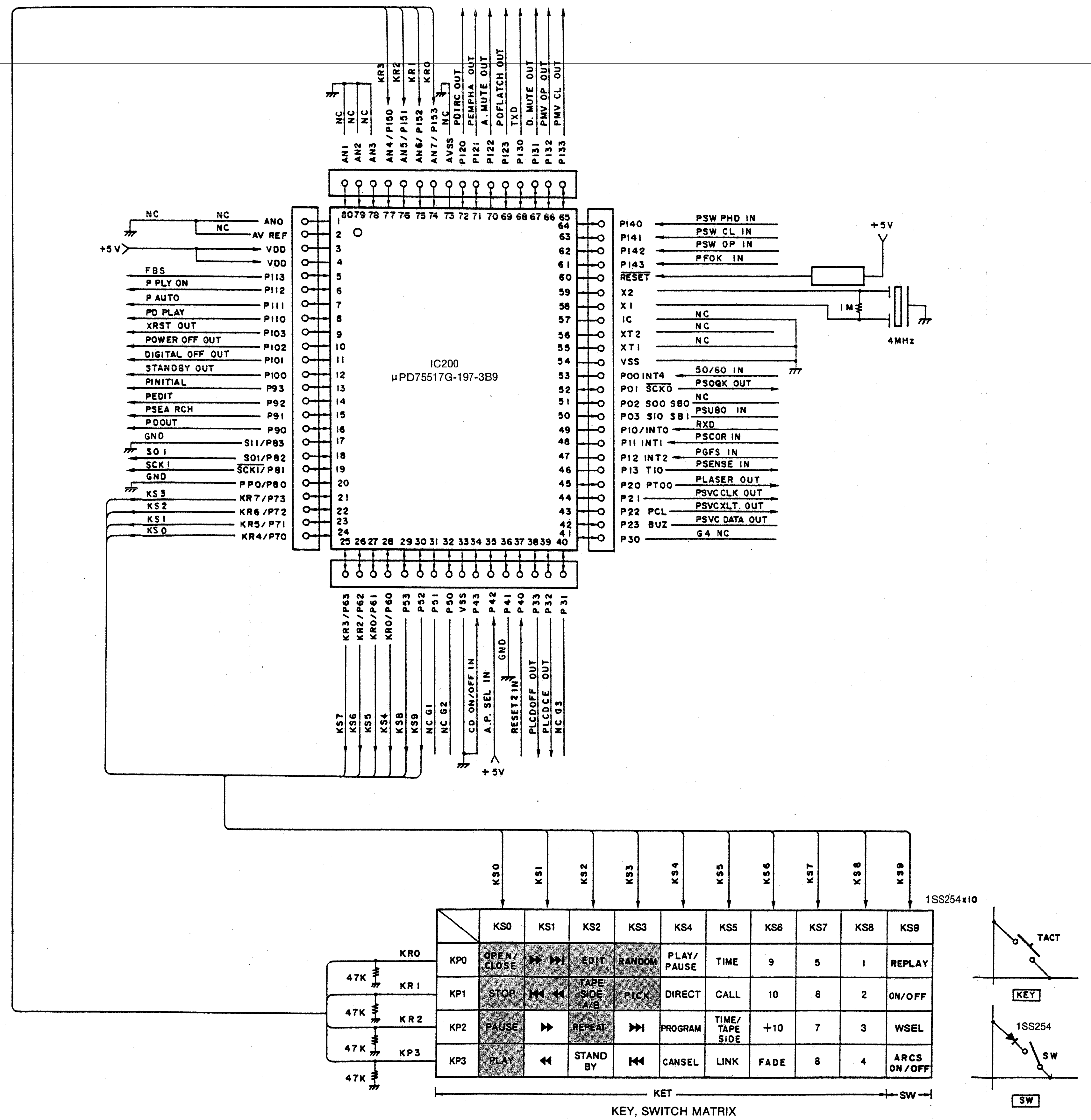

41
40
25
24
64
65
80
1


P140
P141
P142
P143
RESET
X2
X1
IC
XT2
XT1
VSS
P00 INT4
P01 SCK0
P02 SO0 SB0
P03 SI0 SB1
P10/INT0
P11 INT1
P12 INT2
P13 TI0
P20 PTO0
P21
P22 PCL
P23 BUZ
P30
P31
P32
P33
P40
P41
P42
P43
VSS
P50
P51
P52
P53
KR0/P60
KR1/P61
KR2/P62
KR3/P63
P133
P132
P131
P130
P123
P122
P121
P120
AVSS
AN7/P153
AN6/P152
AN5/P151
AN4/P150
AN3
AN2
AN1
AN0
AV REF
VDD
VDD
P113
P112
P111
P110
P103
P102
P101
P100
P93
P92
P91
P90
SI1/P83
SO1/P82
SCK1/P81
PPO/P80
KR7/P73
KR6/P72
KR5/P71
KR4/P70
μPD75517G-197-3B9

- Pin Description

No.	Port Name	Function Name	Function
1	AN0	NC	Ground (In)
2	AVref	NC	Ground (In)
3	VDD		5 V
4	VDD		5 V
5	P113	FBS	Open (Out)
6	P112	PLYON	PLAY display (Open)
7	P111	PAUTO	AUTO and OFF display (Open)
8	P110	PDPLAY	PLAY display (LED control)
9	P103	XRST OUT	Reset signal for DSP
10	P102	POWER OFF OUT	Output for power on/off control (Open)
11	P101	DIGITAL OFF OUT	Output for digital on/off control (Open)
12	P100	STANDBY OUT	Output for power on/off control
13	P93	PINITIAL	Test pin (Open)
14	P92	PEDIT	Test pin (Open)
15	P91	PSEARCH	Test pin (Open)
16	P90	PDOUT	Test pin (Open)
17	P83/SI1	NC	Ground (In)
18	P82/SO1	SO1	Data for LCD
19	P81/$\overline{\text{SCK1}}$	SCK1	Clock for LCD
20	P80/PPO	NC	Ground (In)
21	P73/KR7	KS3 OUT	Key scan output
22	P72/KR6	KS2 OUT	Key scan output
23	P71/KR5	KS1 OUT	Key scan output
24	P70/KR4	KS0 OUT	Key scan output
25	P63/KR3	KS7 OUT	Key scan output (Open)
26	P62/KR2	KS6 OUT	Key scan output (Open)
27	P61/KR1	KS5 OUT	Key scan output (Open)
28	P60/KR0	KS4 OUT	Key scan output (Open)
29	P53	KS8 OUT	Key scan output (Open)
30	P52	KS9 OUT	Key scan output (Open)
31	P51	G1	Open (Out)
32	P50	G2	Open (Out)
33	VSS		Ground (In)
34	P43	CD ON/OFF IN	Input for digital on/off control
35	P42	A.P. SEL IN	Selects the auto power on/off function
36	P41	NC	Open
37	P40	RESET 2	+5 V detection input
38	P33	PLCDOFF OUT	INH for LCD (Open)
39	P32	PLCDCE OUT	CE for LCD (Open)
40	P31	G3	Open (Out)
41	P30	G4	Open (Out)
42	P23/BUZ	PSVCDATA OUT	Servo control signal and data output for D and F
43	P22/PCL	PSVCXLT OUT	Servo control signal latch output
44	P21	PSVCCLK	Servo control signal and clock output for D and F
45	P20/PT00	PLASER OUT	Laser on/off control output
46	P13/T10	PSENSE IN	Servo condition detection signal input
47	P12/INT2	PGFS IN	Rotation sync signal input from DSP
48	P11/INT1	PSCOR IN	Sub code sync signal input
49	P10/INT0	RXD	Denon bus in
50	PO3/SI0	PSUBQ IN	Sub code data input
51	PO2/SO0	NC	Open (Out)
52	PO1/$\overline{\text{SCK0}}$	PSQCK OUT	Clock output for sub code reading
53	PO0/INT4	50/60 IN	50 Hz/60 Hz input
54	VSS		Ground
55	XT1	NC	Ground
56	XT2	NC	Open
57	IC	NC	Ground
58	X1		4 MHz ceramic lock
59	X2		4 MHz ceramic lock
60	$\overline{\text{RESET}}$		Reset signal input
61	P143	PFOK IN	Focus OK signal input
62	P142	PSWOP IN	Loader open position detection
63	P141	PSWCL IN	Loader close position detection
64	P140	PSWPMD IN	Pickup inner track position detection
65	P133	PMVCL OUT	Loader drive signal
66	P132	PMVOP OUT	Loader drive signal
67	P131	D. MUTE OUT	Mute output for the LSI
68	P130	TXD	Denon bus out
69	P123	PDFLATCH OUT	Latch output for D and F (Open)
70	P122	A. MUTE OUT	Audio mute output
71	P121	PEMPHA OUT	Signal output with emphasis control signal present (Open)
72	P120	PDIRC OUT	Servo control signal output
73	AVSS	NC	Ground
74	AN7/P153	KR0 IN	Key return input
75	AN6/P152	KR1 IN	Key return input
76	AN5/P151	KR2 IN	Key return input
77	AN4/P150	KR3 IN	Key return input
78	AN3	NC	Ground (In)
79	AN2	NC	Ground (In)
80	AN1	NC	Ground (In)

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM


IC200
μPD75517G-197-3B9
NC
NC
NC
KR3
KR2
KR1
KR0
AN1
AN2
AN3
AN4/P150
AN5/P151
AN6/P152
AN7/P153
AVSS
P120
P121
P122
P123
P130
P131
P132
P133
NC
P0IRC OUT
PEMPHA OUT
A.MUTE OUT
POFLATCH OUT
TXD
D. MUTE OUT
PMV OP OUT
PMV CL OUT
NC
NC
+5V
ANO
AV REF
VDD
VDD
FBS
P PLY ON
P AUTO
PD PLAY
XRST OUT
POWER OFF OUT
DIGITAL OFF OUT
STANDBY OUT
PINITIAL
PEDIT
PSEA RCH
POOUT
GND
SO 1
SCK1
GND
KS3
KS2
KS1
KS0
P113
P112
P111
P110
P103
P102
P101
P100
P93
P92
P91
P90
SI1/P83
SO1/P82
SCK1/P81
PPO/P80
KR7/P73
KR6/P72
KR5/P71
KR4/P70
P140
P141
P142
P143
RESET
X2
X1
IC
XT2
XT1
VSS
P00 INT4
P01 SCK0
P02 SO0 SB0
P03 SI0 SB1
P10/INT0
P11 INT1
P12 INT2
P13 TI0
P20 PTO0
P21
P22 PCL
P23 BUZ
P30
PSW PHD IN
PSW CL IN
PSW OP IN
PFOK IN
NC
NC
NC
50/60 IN
PSOQK OUT
NC
PSUBO IN
RXD
PSCOR IN
PGFS IN
PSENSE IN
PLASER OUT
PSVCCLK OUT
PSVCXLT. OUT
PSVC DATA OUT
G4 NC
+5V
1M
4MHz
KR3/P63
KR2/P62
KR0/P61
KR0/P60
P53
P52
P51
P50
VSS
P43
P42
P41
P40
P33
P32
P31
KS7
KS6
KS5
KS4
KS8
KS9
NC G1
NC G2
CD ON/OFF IN
A.P. SEL IN
GND
RESET2 IN
PLCDOFF OUT
PLCDCE OUT
NC G3
+5V
KS0
KS1
KS2
KS3
KS4
KS5
KS6
KS7
KS8
KS9
1SS254x10
KR0
KR1
KR2
KP3
47K
47K
47K
47K
TACT
KEY
1SS254
SW
SW

	KS0	KS1	KS2	KS3	KS4	KS5	KS6	KS7	KS8	KS9
KP0	OPEN/ CLOSE	▶▶ ▶▶▎	EDIT	RANDOM	PLAY/ PAUSE	TIME	9	5	1	REPLAY
KP1	STOP	▎◀◀ ◀◀	TAPE SIDE A/B	PICK	DIRECT	CALL	10	6	2	ON/OFF
KP2	PAUSE	▶▶	REPEAT	▶▶▎	PROGRAM	TIME/ TAPE SIDE	+10	7	3	WSEL
KP3	PLAY	◀◀	STAND BY	▎◀◀	CANSEL	LINK	FADE	8	4	ARCS ON/OFF

KET ⟵⟶ SW

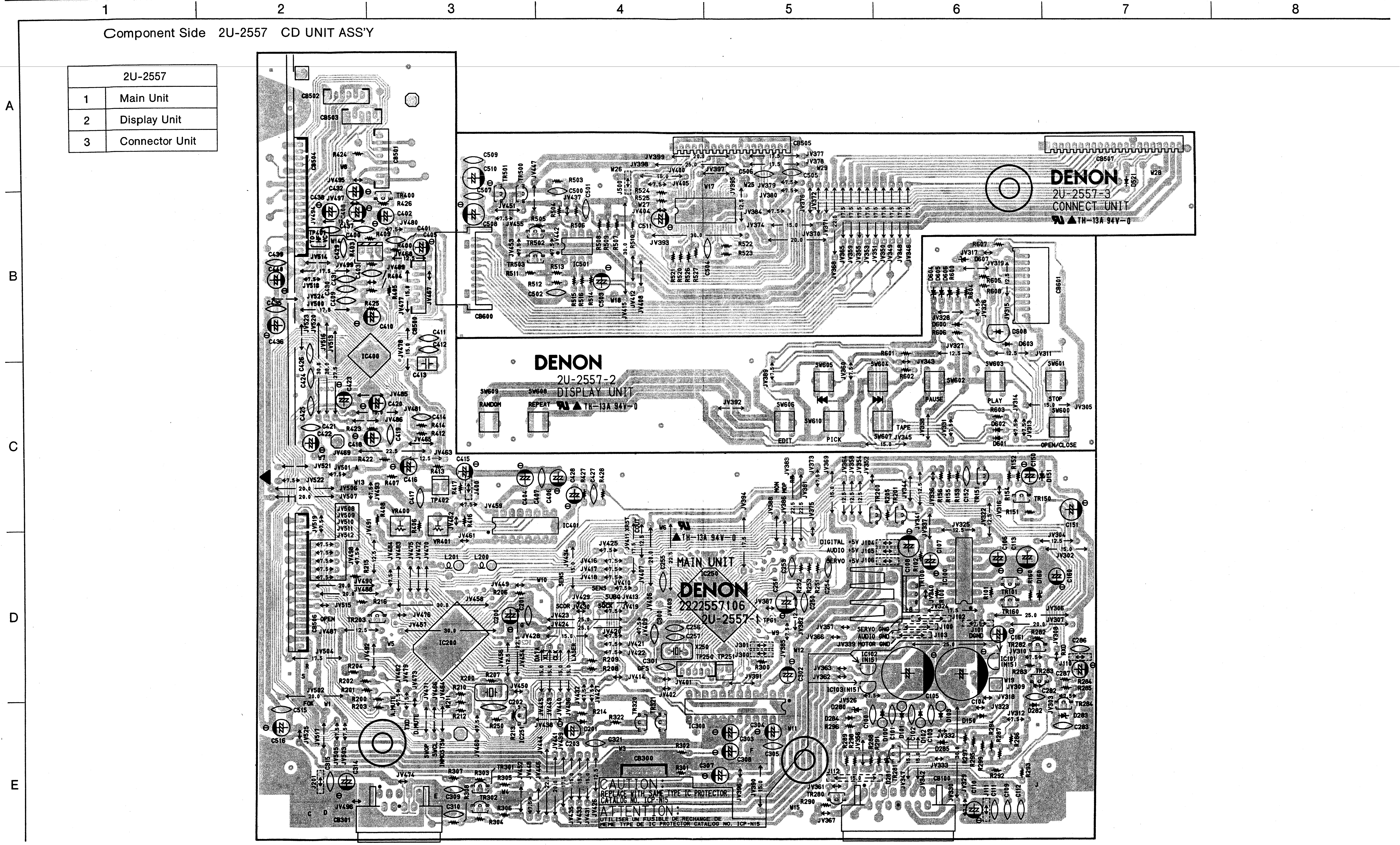
KEY, SWITCH MATRIX

〔Item using this device ▨〕

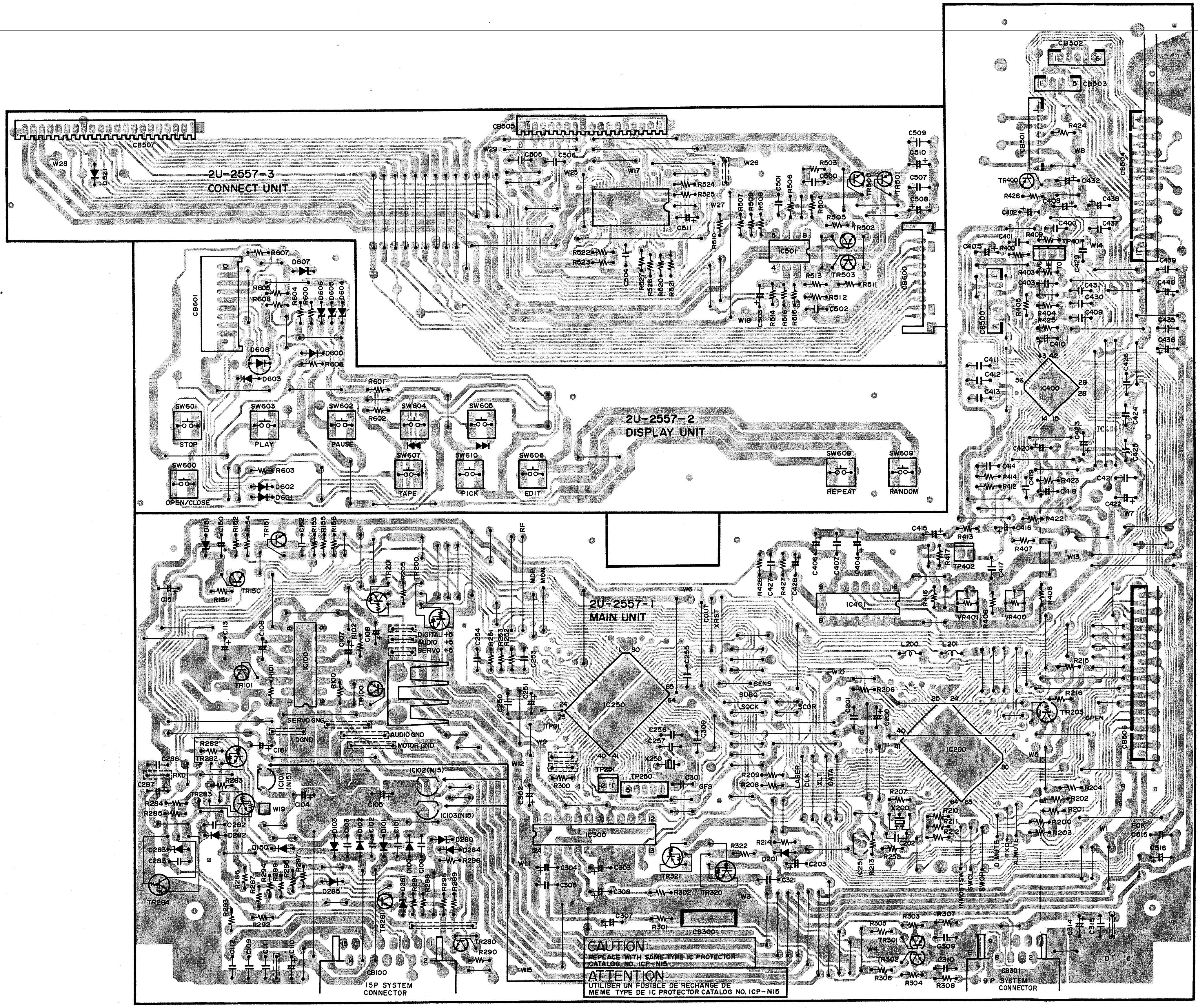
PRINTED WIRING BOARD

Component Side 2U-2557 CD UNIT ASS'Y

2U-2557	
1	Main Unit
2	Display Unit
3	Connector Unit


1
2
3
4
5
6
7
8
A
B
C
D
E
DENON
2U-2557-3
CONNECT UNIT
TH-13A 94V-0
DENON
2U-2557-2
DISPLAY UNIT
TH-13A 94V-0
RANDOM
REPEAT
EDIT
PICK
TAPE
PAUSE
PLAY
STOP
OPEN/CLOSE
IC400
IC401
IC200
IC501
IC300
MAIN UNIT
DENON
2222557106
2U-2557-1
TH-13A 94V-0
DIGITAL
AUDIO
SERVO
SERVO GND
AUDIO GND
MOTOR GND
OPEN
CAUTION:
REPLACE WITH SAME TYPE IC PROTECTOR
CATALOG NO. ICP-N15
ATTENTION:
UTILISER UN FUSIBLE DE RECHANGE DE
MEME TYPE DE IC PROTECTOR CATALOG NO. ICP-N15

Pattern Side


1
2
3
4
5
6
7
8
A
B
C
D
E
2U-2557-3
CONNECT UNIT
CB507
CB505
CB501
CB502
CB503
CB504
CB500
CB600
CB601
IC501
IC400
IC401
2U-2557-2
DISPLAY UNIT
SW601
STOP
SW603
PLAY
SW602
PAUSE
SW604
SW605
SW600
OPEN/CLOSE
SW607
TAPE
SW610
PICK
SW606
EDIT
SW608
REPEAT
SW609
RANDOM
2U-2557-1
MAIN UNIT
IC100
IC250
IC200
IC300
IC101 (N15)
IC102 (N15)
IC103 (N15)
DIGITAL
AUDIO
SERVO
SERVO GND
DGND
AUDIO GND
MOTOR GND
VR401
VR400
X200
X250
TR203
OPEN
CB100
15P SYSTEM CONNECTOR
CB300
CB301
9 P SYSTEM CONNECTOR
CB506
SENS
SUBQ
SQCK
SCOR
LASER
CLK
XLT
DATA
COUT
XRST
RF
MDP
MON

CAUTION:
REPLACE WITH SAME TYPE IC PROTECTOR
CATALOG NO. ICP-N15

ATTENTION:
UTILISER UN FUSIBLE DE RECHANGE DE
MEME TYPE DE IC PROTECTOR CATALOG NO. ICP-N15

CD PLAYER SECTION

NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

- **Resistors**

Ex.: RN 14K 2E 182 G FR

Type	Shape and performance	Power	Resistance	Allowable error	Others
RN	14K	2E	182	G	FR

RD : Carbon Film RC : Composition RS : Metallic oxide Film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse-resistor F : Lead wire forming

※ **Resistance**

1 8 2 ⇨ 1800 ohm = 1.8 kohm
2 — Indicates number of zeros after effective number
1 8 — 2-digit effective number

- Units: ohm

1 R 2 ⇨ 1.2 ohm
2 — 1-digit effective number.
1 R — 2-digit effective number, decimal point indicated by R.

- Units: ohm

※ **Capacity (electrolyte only)**

2 2 R ⇨ 2200 μF
R — Indicates number of zeros after effective number.
2 2 — 2-digit effective number.

- Units: μF

2 R 2 ⇨ 2.2 μF
2 — 1-digit effective number.
2 R — 2-digit effective number, decimal point indicated by R.

- Units: μF

- **Capacitors**

Ex.: CE 04W 1H 2R2 M BP

Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others
CE	04W	1H	2R2	M	BP

CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte CQ : Film CK : Ceramic	1C : 16V 1E : 25V 1V : 35V	J : ±5% K : ±10% M : ±20%	HR : Ripple-resistant type DL : For charge and discharge HF : For assuring high frequency
CC : Ceramic CP : Oil CM : Mica CF : Metallized CH : Metallized	1H : 50V 2A : 100V 2B : 125V 2C : 160V 2D : 200V 2E : 250V 2H : 500V 2J : 630V	Z : +80% −20% P : +100% −0% C : ±0.25pF D : ±0.5pF = : Others	U : UL part C : CSA part W : UL-CSA type F : Lead wire forming

※ **Capacity (except electrolyte)**

2 R 2 ⇨ 2200pF = 2200 μF = 0.002 μF
2 — (More than 2) — Indicates number of zeros after effective number.
2 R — 2-digit effective number.

- Units: μF

2 2 1 ⇨ 220pF
1 — (0 or 1) — Indicates number of zeros after effective number.
2 2 — 2-digit effective number.

- Units: pF
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

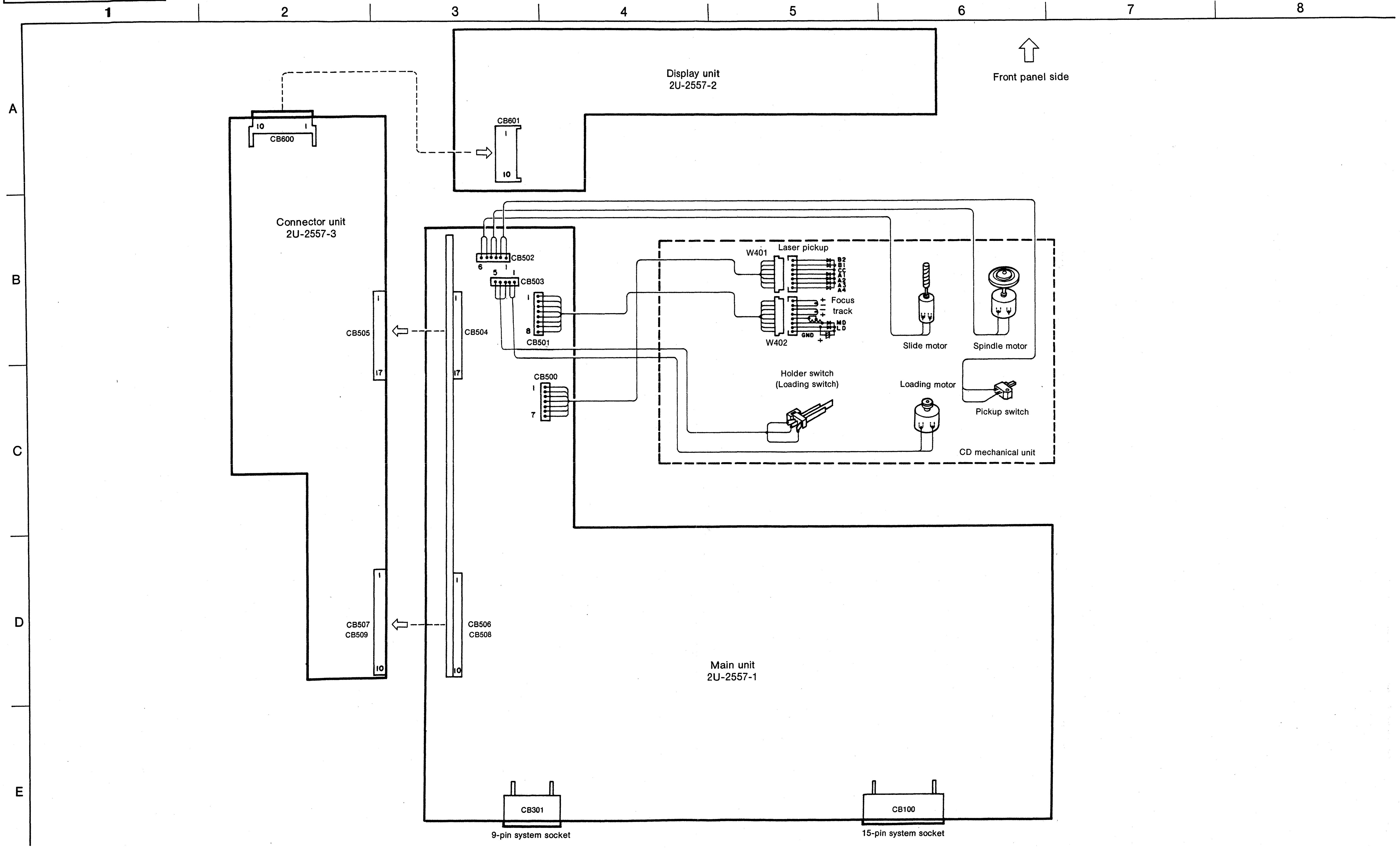
2U-2557 CD UNIT ASS'Y PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC100	263 0693 005	IC M5290P	
IC101～103	268 0073 905	IC ICP-N15T	IC Protector 15 V
IC200	262 1791 107	IC μPD75517GF-197-3B9	μ-com
IC250	262 1819 005	IC CXD2500BQ	
IC251	263 0652 907	IC PST529C	
IC300	262 1824 003	IC LC78835	
IC400	263 0821 000	IC HA12158	
IC500	263 0805 903	IC BA6296FP	
IC501	263 0565 007	IC BA15218	
TR100	272 0083 004	Transistor 2SB1185(E/F)	
TR150	273 0195 908	Transistor 2SC2060(Q)	
TR151	273 0303 910	Transistor 2SC1740S(S)	
TR200,201	269 0020 906	Transistor DTC114ES	Built in Resistor
TR203	269 0080 904	Transistor DTA114TS	Built in Resistor
TR280,281	271 0192 905	Transistor 2SA933S(S)	
TR282～284	269 0040 902	Transistor DTC144ES	Built in Resistor
TR301,302	274 0160 907	Transistor 2SD2144STPU	
TR320	269 0046 906	Transistor DTA114ES	Built in Resistor
TR321	269 0020 906	Transistor DTC114ES	Built in Resistor
TR400	271 0192 905	Transistor 2SA933S(S)	
TR500	273 0195 908	Transistor 2SC2060(Q)	
TR501	271 0271 907	Transistor 2SA934(Q)	
TR502	273 0195 908	Transistor 2SC2060(Q)	
TR503	271 0271 907	Transistor 2SA934(Q)	
D100～103	276 0553 905	Diode 1SR35-200A	
D150	276 0531 901	Diode 1SS254	
D151	276 0462 915	Zener Diode HZS6B-2	6 V
D201	276 0531 901	Diode 1SS254	
D280～283	276 0462 902	Zener Diode HZS6B-1	6 V
D284,285	276 0503 900	Diode 1SS198	
D600～603	276 0531 901	Diode 1SS254	
D604～607	276 0462 902	Zener Diode HZS6B-1	6 V
D608	393 9483 902	LED SLR-34MC70F120 G	Green
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type. Refer to the Scematic Diagram for those Parts.)			
VR400	211 6087 931	Semi Fixed VR 4.7k ohm	V06PB472
CAPACITORS GROUP			
C104	254 4254 792	Electrolytic 2200μF/16V	CE04W1C222MC
C105	254 4255 704	Electrolytic 3300μF/16V	CE04W1C332MC
C106	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C107	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M
C108	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C109	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C110	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C111,112	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C150	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C151	254 4254 941	Electrolytic 100μF/16V	CE04W1C101M
C152	253 9030 963	BC Ceramic 0.01μF/25V	CK45=1E103K
C200	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C201,202	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C203	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C250	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C251	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C253	256 1034 937	Metalized 0.047μF/50V	CF93A1H473J
C254	253 1180 947	Ceramic 1500pF/50V	CK45B1H152K
C255	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C256	253 4535 939	Ceramic 3pF/50V	CC45SL1H030C
C257	253 4535 955	Ceramic 5pF/50V	CC45SL1H050C
C282,283	253 1179 987	Ceramic 470pF/50V	CK45B1H471K
C286	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C301	253 4536 983	Ceramic 22pF/50V	CC45SL1H220J
C302,303	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C304	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M
C305	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C307,308	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C309,310	253 4538 949	Ceramic 100pF/50V	CC45SL1H101J
C400	253 1180 921	Ceramic 1000pF/50V	CK45B1H102K
C401	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C402	254 4252 927	Electrolytic 47μF/10V	CE04W1A470M
C403	253 4538 965	Ceramic 120pF/50V	CC45SL1H121J
C404	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C405	254 4305 942	Electrolytic 0.47μF/50V	CE04W1HR47M(SRE)
C408	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C409	253 9031 962	BC Ceramic 2700pF/25V	CK45=1E272K
C410	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C411	253 9035 942	BC Ceramic 0.056μF/25V	CK45=1E563K
C412	253 9035 926	BC Ceramic 0.027μF/25V	CK45=1E273K
C413	256 1034 995	Metalized 0.15μF/50V	CF93A1H154J
C414	253 1179 974	Ceramic 390pF/50V	CK45B1H391K
C415	254 4252 901	Electrolytic 22μF/10V	CE04W1A220M
C416	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22M
C417	253 1180 921	Ceramic 1000pF/50V	CK45B1H102K
C418	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22M
C419	253 9031 988	BC Ceramic 5600pF/25V	CK45=1E562K
C420	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C421	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C422	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C423	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C424,425	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C426	253 1180 921	Ceramic 1000pF/50V	CK45B1H102K
C427	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C428	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C429	253 9030 976	BC Ceramic 0.015μF/25V	CK45=1E153K
C430	253 9030 921	BC Ceramic 2200pF/25V	CK45=1E222K
C431	253 9030 992	BC Ceramic 0.033μF/25V	CK45=1E333K
C432	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C435	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C436	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C500	253 9031 988	BC Ceramic 5600pF/25V	CK45=1E562K
C501	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C502	253 9030 989	BC Ceramic 0.022μF/25V	CK45=1E223K
C503	254 4260 964	Electrolytic 3.3F/50μV	CE04W1H3R3M
C504	253 9039 906	BC Ceramic 0.1μF/25V	CK45=1E104Z

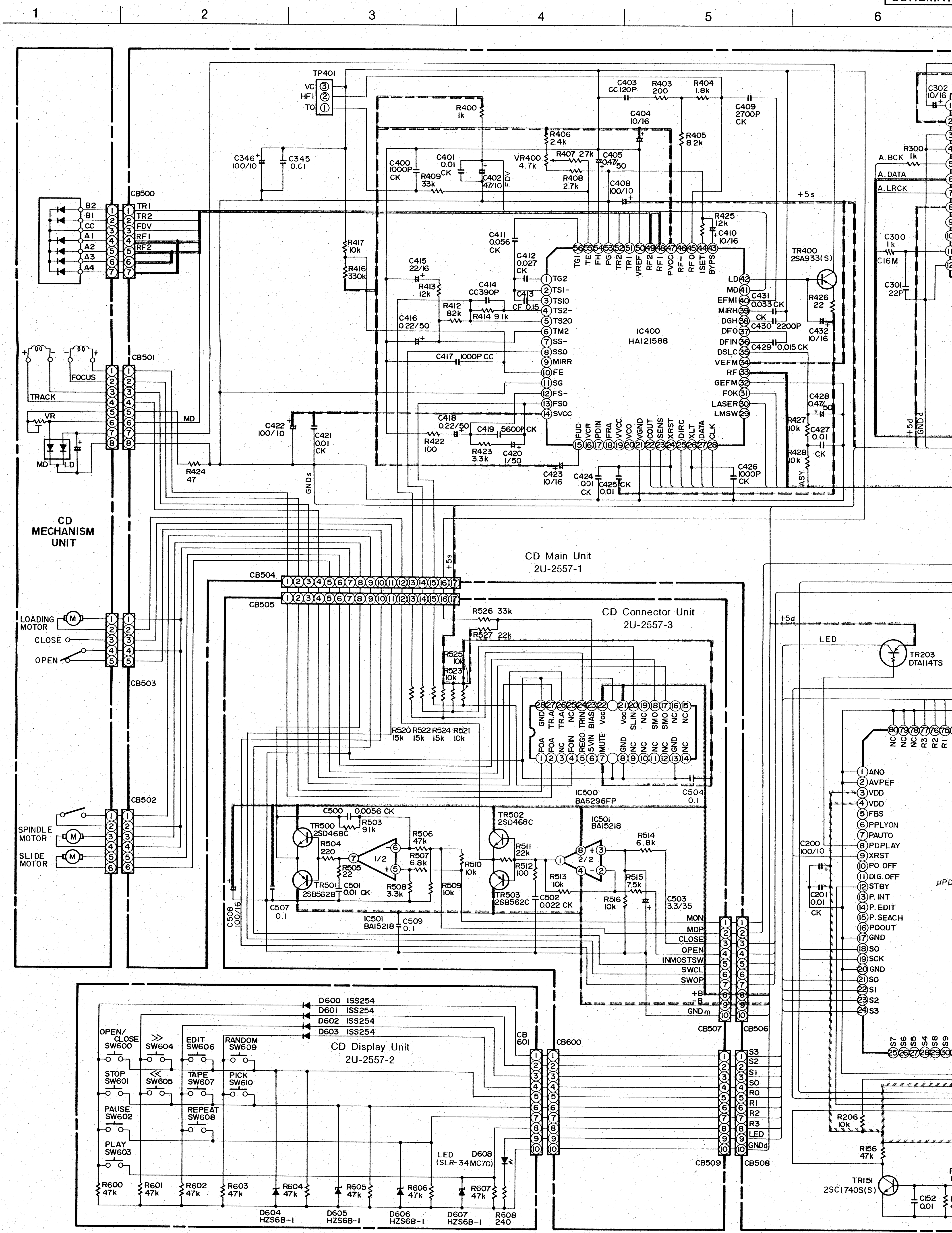
Ref. No.	Part No.	Part Name	Remarks
C507	253 9039 906	BC Ceramic 0.1μF/25V	CK45=1E104Z
C508	254 4254 941	Electrolytic 100μF/16V	CE04W1C101M
C509	253 9039 906	BC Ceramic 0.1μF/25V	CK45=1E104Z

OTHERS GROUP				Q'ty
	—	(P.W.Board)		(1)
	212 5604 910	Tact Switch		11
X200	399 0201 903	Ceramic Vibrator	EFOEC4004T4	1
X250	399 0200 904	Ceramic Vibrator	CSA16.93MX	1
CB100	204 8284 022	15 P System Socket		1
CB301	204 8284 035	9 P System Socket		1
CB500	205 0343 074	7 P Conn. Base(KR-PH)		1
CB501	205 0343 087	8 P Conn. Base(KR-PH)		1
CB502	205 0343 061	6 P Conn. Base(KR-PH)		1
CB503	205 0343 058	5 P Conn. Base(KR-PH)		1
CB504	205 0806 029	17 P Conn. Base		1
CB505	205 0805 020	17 P Conn. Socket		1
CB506	205 0806 032	20 P Conn. Base		1
CB507	205 0805 033	20 P Conn. Socket		1
CB600	205 0726 099	10 P Bottom Socket		1
CB601	205 0727 098	10 P Bottom Plug		1
TP401	205 0190 036	3 P NH Conn. Base		1

WIRING DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
Display unit
2U-2557-2
Front panel side
CB601
1
10
CB600
10
1
Connector unit
2U-2557-3
CB505
1
17
CB504
1
17
CB502
6
1
5
1
CB503
1
8
CB501
CB500
1
7
W401
Laser pickup
B2
B1
CC
A1
A2
A3
A4
+
–
–
+
Focus
track
MD
LD
GND
+
W402
Slide motor
Spindle motor
Holder switch
(Loading switch)
Loading motor
Pickup switch
CD mechanical unit
CB507
CB509
1
10
CB506
CB508
1
10
Main unit
2U-2557-1
CB301
9-pin system socket
CB100
15-pin system socket

SCHEMAT


1
2
3
4
5
6
CD MECHANISM UNIT
CD Main Unit
2U-2557-1
CD Connector Unit
2U-2557-3
CD Display Unit
2U-2557-2
TP401
VC
HFI
TO
CB500
B2
B1
CC
A1
A2
A3
A4
TR1
TR2
FDV
RF1
RF2
CB501
FOCUS
TRACK
VR
MD
LD
CB503
LOADING MOTOR
CLOSE
OPEN
CB502
SPINDLE MOTOR
SLIDE MOTOR
CB504
CB505
+5s
+5d
GNDs
GNDd
IC400
HA12158B
TG1
TE
FH
PG
TR2
TR1
VREF
RF2
RF1
PVCC
RF-
RFO
ISET
BYPS
TG2
TSI-
TSIO
TS2-
TS2O
TM2
SS-
SSO
MIRR
FE
SG
FS-
FSO
SVCC
FUD
VCR
PDIN
FRA
VVCC
VCO
VGND
COUT
SENS
XRST
DIRC
XLT
DATA
CLK
LD
MD
EFMI
MIRH
DGH
DFO
DFIN
DSLC
VEFM
RF
GEFM
FOK
LASER
LMSW
TR400
2SA933(S)
R400 1k
C403 CC120P
R403 200
R404 1.8k
C409 2700P CK
C404 10/16
R405 8.2k
R406 2.4k
R407 27k
C405 0.47/50
VR400 4.7k
R408 2.7k
C408 100/10
C400 1000P CK
C401 0.01 CK
R409 33k
C402 47/10
C346 100/10
C345 0.01
R425 12k
C410 10/16
R417 10k
R416 330k
C411 0.056 CK
C412 0.027 CK
C413 CF 0.15
C415 22/16
R413 12k
C414 CC390P
R412 82k
R414 9.1k
C416 0.22/50
C417 1000P CC
C418 0.22/50
C419 5600P CK
R422 100
R423 3.3k
C420 1/50
C422 100/10
C421 0.01 CK
R424 47
C423 10/16
C424 0.01 CK
C425 0.01 CK
C426 1000P CK
C431 0.033 CK
C430 2200P CK
C429 0.015 CK
C432 10/16
R426 22
C428 0.47/50
R427 10k
C427 0.01 CK
R428 10k
ASY
R526 33k
R527 22k
R525 10k
R523 10k
R520 15k
R522 15k
R524 15k
R521 10k
IC500
BA6296FP
FOA
TR.A
NC
FOIN
REGO
5VIN
MUTE
GND
TRIN
BIAS
Vcc
SLIN
SMO
C504 0.1
C500 0.0056 CK
TR500 2SD468C
R503 91k
R504 220
R505 22
TR501 2SB562B
C501 0.01 CK
R506 47k
R507 6.8k
R508 3.3k
R510 10k
R509 10k
IC501 BA15218
C509 0.1
C507 0.1
C508 100/16
TR502 2SD468C
R511 22k
R512 100
TR503 2SB562C
C502 0.022 CK
R513 10k
R514 6.8k
R515 7.5k
R516 10k
C503 3.3/35
MON
MDP
CLOSE
OPEN
INMOSTSW
SWCL
SWOP
+B
-B
GNDm
CB507
CB506
LED
TR203 DTA114TS
D600 ISS254
D601 ISS254
D602 ISS254
D603 ISS254
OPEN/CLOSE SW600
SW604
EDIT SW606
RANDOM SW609
STOP SW601
SW605
TAPE SW607
PICK SW610
PAUSE SW602
REPEAT SW608
PLAY SW603
CB 601
CB600
LED D608 (SLR-34MC70)
R600 47k
R601 47k
R602 47k
R603 47k
R604 47k
R605 47k
R606 47k
R607 47k
R608 240
D604 HZS6B-1
D605 HZS6B-1
D606 HZS6B-1
D607 HZS6B-1
CB509
CB508
S3
S2
S1
SO
RO
R1
R2
R3
GNDd
C302 10/16
R300 1k
A.BCK
A.DATA
A.LRCK
C300 1k
C16M
C301 22P
ANO
AVPEF
VDD
FBS
PPLYON
PAUTO
PDPLAY
XRST
PO.OFF
DIG.OFF
STBY
P.INT
P.EDIT
P.SEACH
POOUT
GND
SO
SCK
SI
S2
S3
C200 100/10
C201 0.01 CK
µPD
R206 10k
R156 47k
TR151 2SC1740S(S)
C152 0.01

Signal Line
+5V Line (Switched)
-5 Line (Unswitched)
+B Line
-B Line

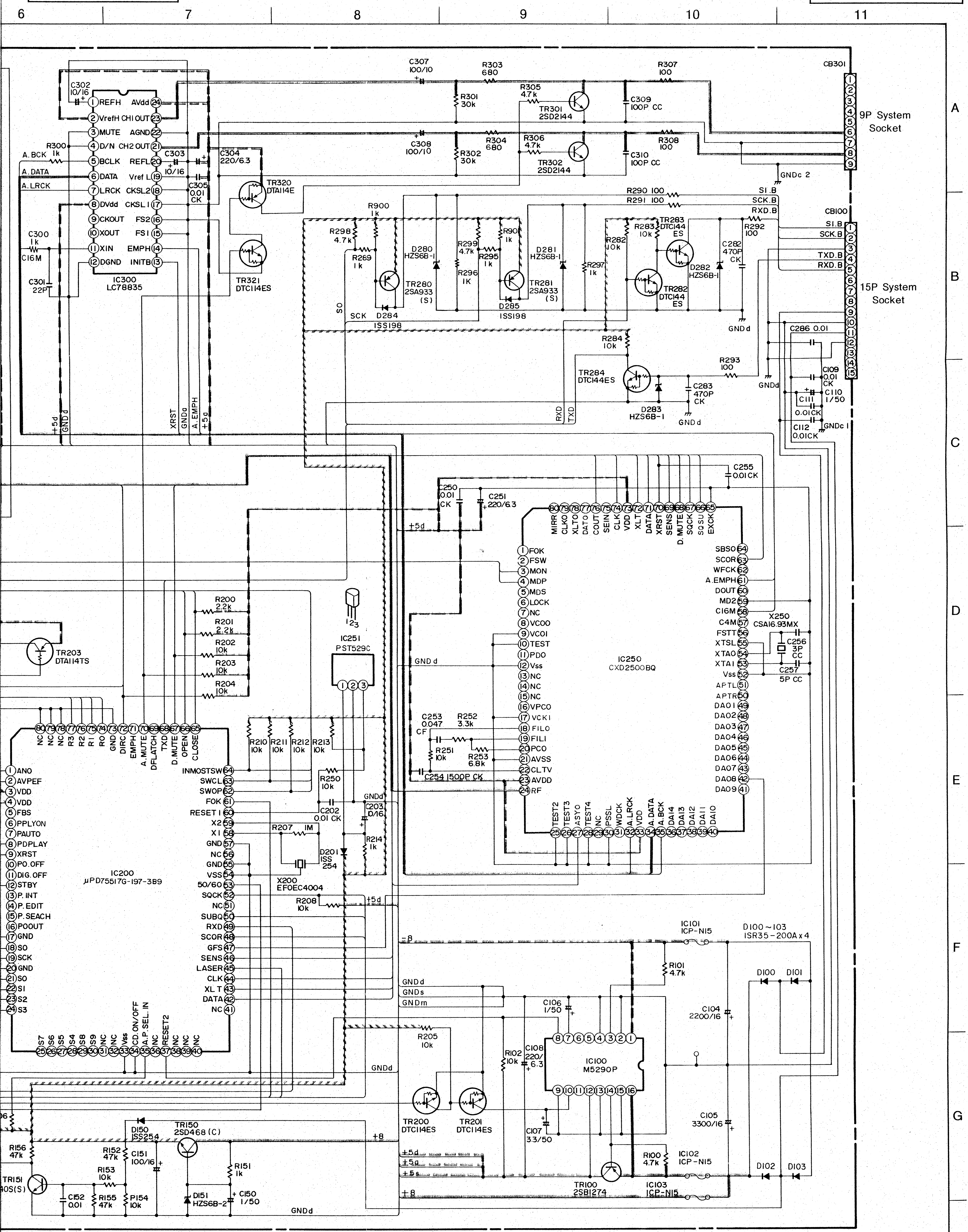
WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning th
leakage current exc
defective.

WARNING
DO NOT return the

SCHEMATIC DIAGRAM

CD PLAYER SECTION


6
7
8
9
10
11
A
B
C
D
E
F
G
H
C302 10/16
REFH
AVdd
VrefH CH1 OUT
MUTE
AGND
D/N
CH2 OUT
BCLK
REFL
DATA
Vref L
LRCK
CKSL2
DVdd
CKSL1
CKOUT
FS2
XOUT
FS1
XIN
EMPH
DGND
INITB
IC300
LC78835
R300 1k
A.BCK
A.DATA
A.LRCK
C300 1k
C16M
C301 22P
C303 10/16
C304 220/6.3
C305 0.01 CK
TR320 DTA114E
TR321 DTC114ES
XRST
GNDa
A.EMPH
+5a
+5d
GND d
C307 100/10
R303 680
R301 30k
R305 4.7k
TR301 2SD2144
C309 100P CC
R307 100
CB301
9P System Socket
C308 100/10
R304 680
R302 30k
R306 4.7k
TR302 2SD2144
C310 100P CC
R308 100
GNDc 2
R290 100
R291 100
SI.B
SCK.B
RXD.B
R900 1k
R298 4.7k
R269 1k
D280 HZS6B-1
TR280 2SA933 (S)
SO
SCK
D284 ISS198
R299 4.7k
R295 1k
R296 1K
R901 1k
D281 HZS6B-1
TR281 2SA933 (S)
D285 ISS198
R297 1k
R282 10k
R283 10k
TR283 DTC144 ES
TR282 DTC144 ES
D282 HZS6B-1
C282 470P CK
R292 100
GNDd
CB100
SI.B
SCK.B
TXD.B
RXD.B
15P System Socket
C286 0.01
R284 10k
TR284 DTC144ES
R293 100
C283 470P CK
D283 HZS6B-1
RXD
TXD
GNDd
C109 0.01 CK
C110 1/50
C111 0.01CK
C112 0.01CK
GNDc 1
C255 0.01CK
C250 0.01 CK
C251 220/6.3
+5d
MIRR
CLKO
XLTO
DATO
COUT
SEIN
CLK
VDD
XLT
DATA
XRST
SENS
D.MUTE
SQCK
SQSO
EXCK
FOK
FSW
MON
MDP
MDS
LOCK
NC
VCOO
VCOI
TEST
PDO
Vss
NC
NC
NC
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
SBSO
SCOR
WFCK
A.EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
Vss
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
X250 CSA16.93MX
C256 3P CC
C257 5P CC
IC250
CXD2500BQ
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
VDD
A.LRCK
A.DATA
A.BCK
DA14
DA13
DA12
DA11
DA10
GND d
C253 0.047
CF
R252 3.3k
R251 10k
R253 6.8k
C254 1500P CK
IC251
PST529C
R200 2.2k
R201 2.2k
R202 10k
R203 10k
R204 10k
TR203 DTA114TS
R210 10k
R211 10k
R212 10k
R213 10k
R250 10k
GNDd
C202 0.01 CK
C203 10/16
R207 1M
R214 1k
D201 ISS 254
X200 EFOEC4004
R208 10k
+5d
NC
NC
NC
R3
R2
R1
RO
GND
DIRC
EMPH
A.MUTE
DFLATCH
TXD
D.MUTE
OPEN
CLOSE
ANO
AVPEF
VDD
VDD
FBS
PPLYON
PAUTO
PDPLAY
XRST
PO.OFF
DIG.OFF
STBY
P.INT
P.EDIT
P.SEACH
POOUT
GND
SO
SCK
GND
SO
SI
S2
S3
IC200
μPD75517G-197-389
INMOSTSW
SWCL
SWOP
FOK
RESET 1
X2
X1
GND
NC
GND
VSS
50/60
SQCK
SUBQ
RXD
SCOR
GFS
SENS
LASER
CLK
XLT
DATA
NC
S7
S6
S5
S4
S8
S9
NC
NC
Vss
CD.ON/OFF
A.P.SEL.IN
NC
RESET2
NC
NC
NC
IC101 ICP-N15
D100~103 ISR35-200A x 4
-8
R101 4.7k
D100
D101
GND d
GNDs
GNDm
C106 1/50
C104 2200/16
R205 10k
R102 10k
C108 220/6.3
IC100
M5290P
GNDd
TR200 DTC114ES
TR201 DTC114ES
C107 33/50
C105 3300/16
R100 4.7k
IC102 ICP-N15
D102
D103
+5d
+5a
+5s
+8
TR100 2SB1274
IC103 ICP-N15
D150 ISS254
TR150 2SD468 (C)
+8
R156 47k
R152 47k
C151 100/16
R151 1k
R153 10k
TR151
C152 0.01
R155 47k
P154 10k
D151 HZS6B-2
C150 1/50
GNDd

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is defective.

WARNING

DO NOT return the unit to the customer until the problem is located and corrected.

NOTES

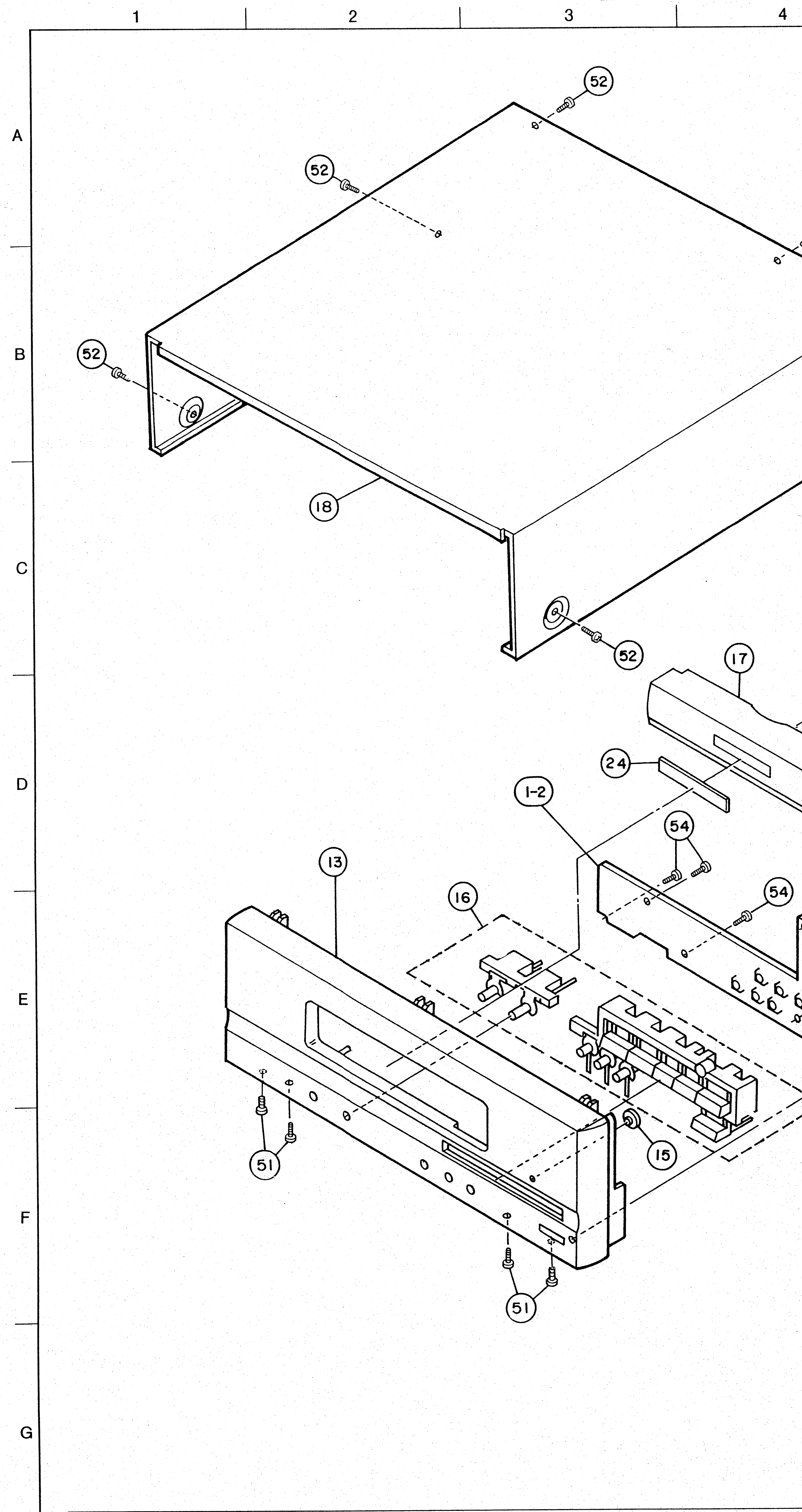
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

CD PLAYER SECTION

PARTS LIST OF UCD-65 EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	2U- 2557	CD Unit Ass'y		1^{S}
1-1	—	CD Main Unit		(1)
1-2	—	CD Display Unit		(1)
1-3	—	CD Connect Unit		(1)
2	254 4255 704	Chemicon 3300μF/16 V	C-105	1
3	204 8284 035	9 P System Socket	CB301	1
4	204 0284 022	15 P System Socket	CB100	1
◉ 5	411 9115 015	:Main Chassis		1
6	124 0079 007	Felt Sheet		4
7	449 0088 104	Mech. Holder		3
◉ 8	412 2741 036	P.W.B. Holder(H=10)		1
◉ 9	105 1082 018	Rear Panel		1
◉ 10	337 0017 018	CD Mech. Unit		1
★ 11	204 2307 031	7 P PH-PH Conn. Cord		1
★ 12	204 2306 058	8 P PH-PH Conn. Cord		1
◉ 13	146 1448 200	Front Panel		1
14	—	—		
15	143 0789 000	Lens(C)		1
16	113 1586 104	Play Button		1
17	146 1460 204	Loader Panel		1
◉ 18	102 0537 015	Top Cover		1
★ 19	513 2121 001	Rating Sheet		1
◉ 20	412 2814 028	Card Spacer(L=10)		1
21	254 4254 792	Chemicon 2200μF/16 V	C-104	1
★ 22	513 2066 001	:Laser Caution		
★ 23	513 0985 003	Inst. Label		
24	144 2310 001	CD Plate		1
25				
26				
SCREWS				
51	473 7002 021	Tapping Screw (S) 3×8	Black	4
52	473 7015 018	Tapping Screw (S) 3×8	Black	9
53	473 7500 044	Tapping Screw (P) 3×8	Black	6
54	473 7505 007	Tapping Screw (P) 2.6×8		7
55	473 7002 034	Tapping Screw (S) 3×6	Black	3
56				
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	505 0241 005	Cabinet Cover		1
102	503 1091 009	:Cushion		1
103				
104				

EXPLODED VIEW

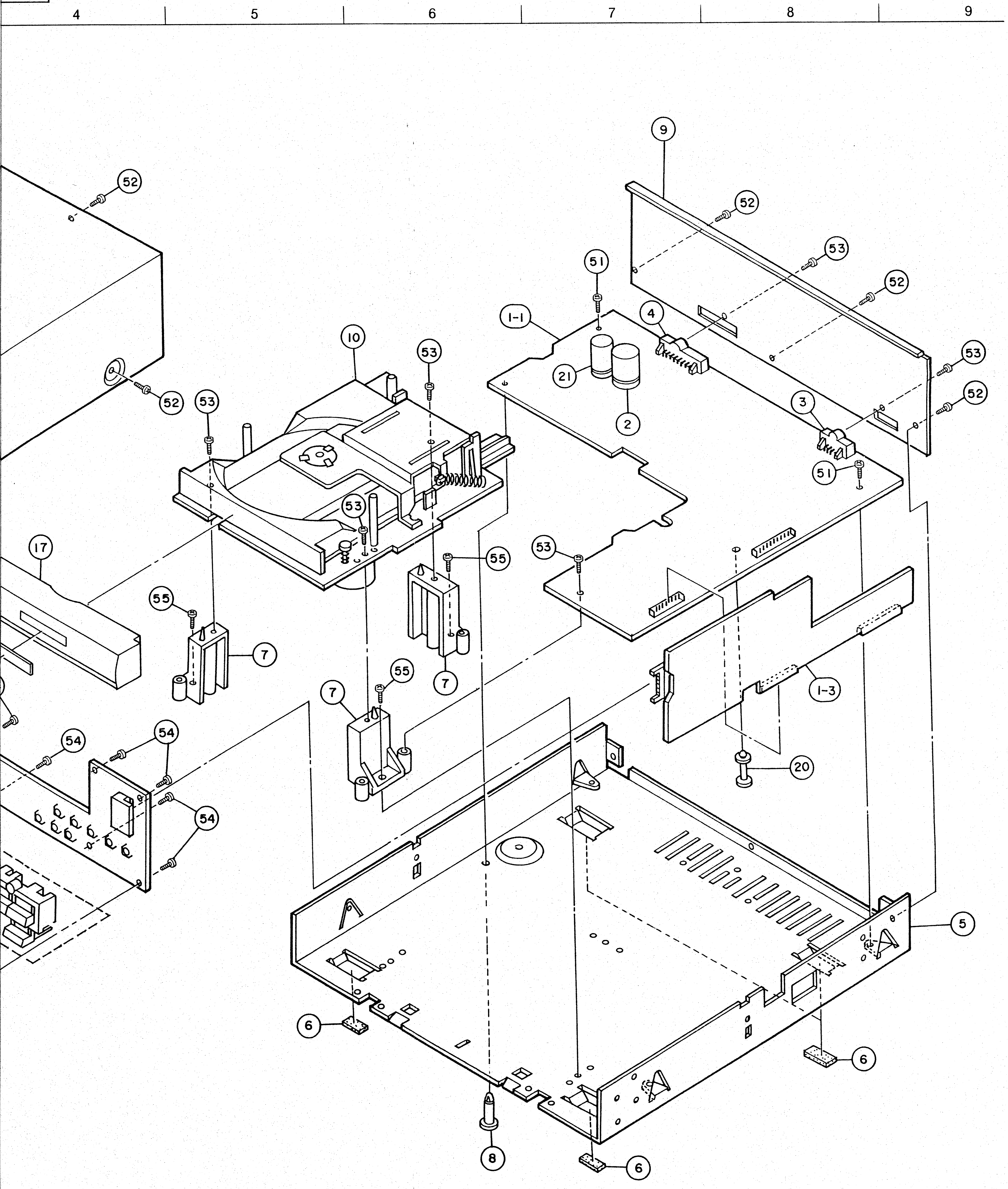


H

NOTE ON PARTS LIST
- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

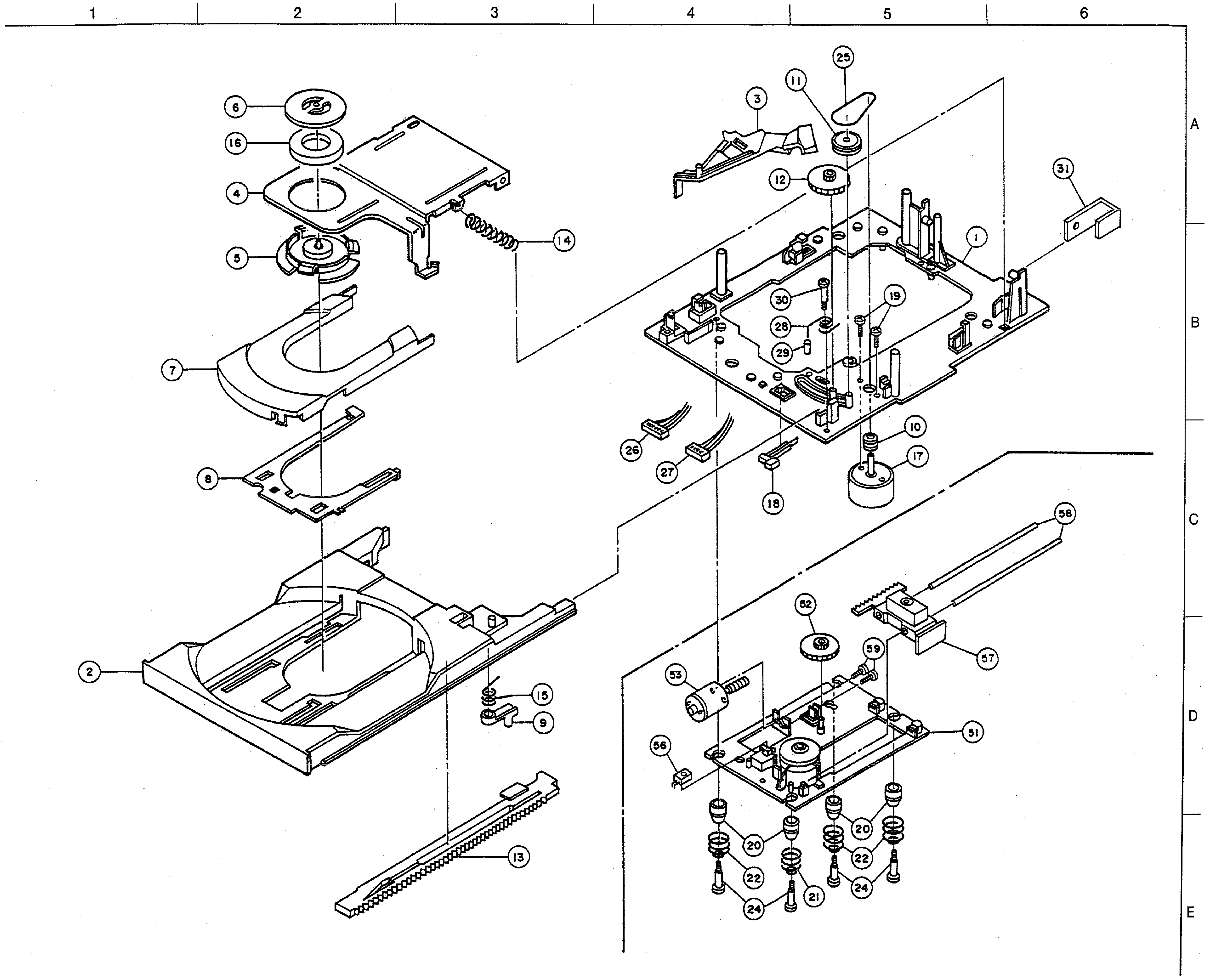
WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

D VIEW


4
5
6
7
8
9
52
9
52
53
51
52
1-1
4
10
53
21
53
52
2
3
53
52
51
53
17
53
55
55
7
7
55
7
1-3
20
54
54
54
5
6
6
8
6

suppling, or in some case

DISASSEMBLY OF CD MECHANISM



CD MECHANISM PARTS LIST (Part No.:337 0017 018)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	9KA 81A2 95	Loading Plate Ass'y OS		1^S
1-1	—	Loading Plate		(1)
2	9KA 81G9 73	Tray 201		1
3	9KA 81G9 74	Switch Lever		1
◉ 4	9KA 81P4 62	Clamper Arm		1
5	9KA 81G9 75	Clamper		1
6	9KA 81P4 63	Clamper Plate		1
7	9KA 81G9 76	Disc Holder		1
8	9KA 81G9 77	Lifter Cam		1
9	9KA 81G9 78	Latch		1
10	9KA 81G2 35	Motor Pulley	Mold	1
11	9KA 81G1 22	Pulley Gear		1
12	9KA 81G1 23	Gear 3		1
13	9KA 81G5 81	Rack 11B		1
14	9KA 81S0 59	Clamp Spring		1
15	9KA 81S0 60	Latch Spring		1
◉ 16	9KA 82G0 57	Clamper Magnet		1
◉ 17	9KM 01T0 94	Motor	MDN-4RA3EZAS	1
◉ 18	9KS 01W0 51	Leaf Switch (Loading Limit Switch)	LSC122338	1
19	9KM 20S0 04	Tams Screw	M2×4	2
20	9KA 82G0 56	Float Cushion M3		4
21	9KA 81S0 66	Float Spring M3 A		1
22	9KA 81S0 67	Float Spring M3 B		3
23	—	—		
24	9KA 81H0 85	Fixing Screw C		4
25	9KA 82G2 42	Belt 1.6×18.7		1
◉ 26	9KA 82G1 23	Connector Cord	CNW 6P M3	1
◉ 27	9KA 82G1 24	Connector Cord	CNW 5P M3	1
28	9KA 81S0 71	Tray Spring 201		1
29	9KA 82G1 84	UL Tube 2×5.5		1
30	9KA 82H0 35	Floater Screw RM		1
31	463 0726 006	Support Spring		1
51	9KA 81A3 33	Spindle Motor (T/T) Ass'y	Including Motor T/Table	1^S
51-1	—	Unit Plate M3G2		(1)
51-2	9KA 81A2 93	Turn Table Ass'y		(1)
51-3	—	Turn Table Plate		(1)
51-4	9KM 01T1 27	Spindle Motor	MDN-4RA3EZAS	(1)
51-5	9KM 20N0 03	Pan Screw	M2×3	(2)
52	9KA 81G9 66	Slide Gear T		1
◉ 53	9KA 81A2 90	Feed Motor Ass'y		1^S
53-1	—	F. Motor	RD-050Y	(1)
53-2	—	Warm Gear		(1)
54	—	—		
55	—	—		
56	9KS 01W0 56	Switch	SPPB-11	1
◉ 57	9KA 82G3 12	Optical Pickup Ass'y	HOP-M3D	1^S
58	9KA 81H1 07	Guide Bar		2
59	9KM 20N0 03	Pan Screw	M2×3	2

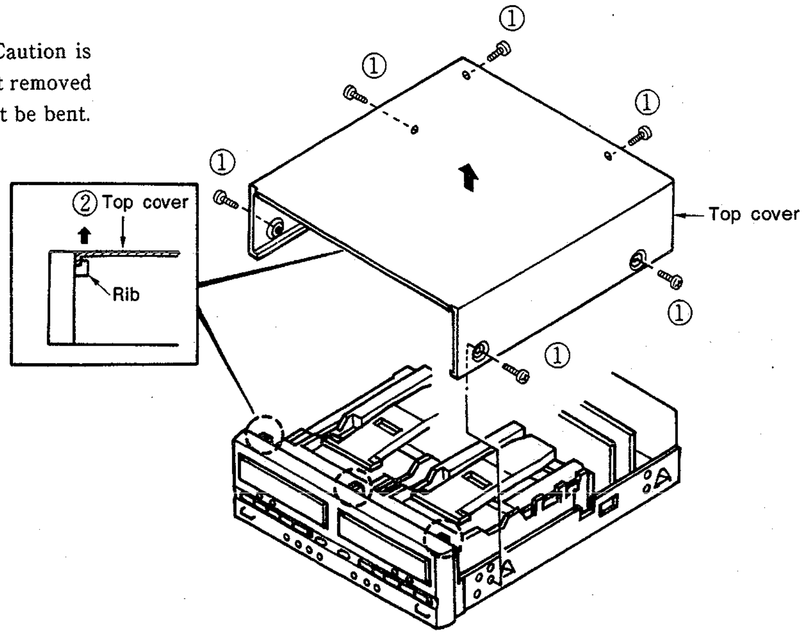
DISASSEMBLY PROCEDURES

(Follow these procedures in reverse order to reassemble.)

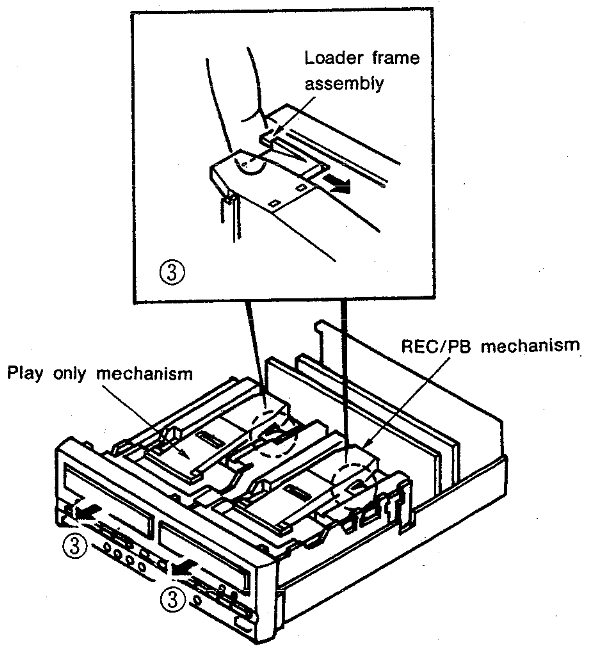
. Removing the Top Cover and the Front Panel

) Remove the six screws that fasten the top cover.

) The top cover is held in the rib of the front panel. Caution is required when taking off the top cover since if it is not removed in the direction of the arrow (vertically), the rib might be bent.


①
①
①
①
①
①
② Top cover
Rib
Top cover

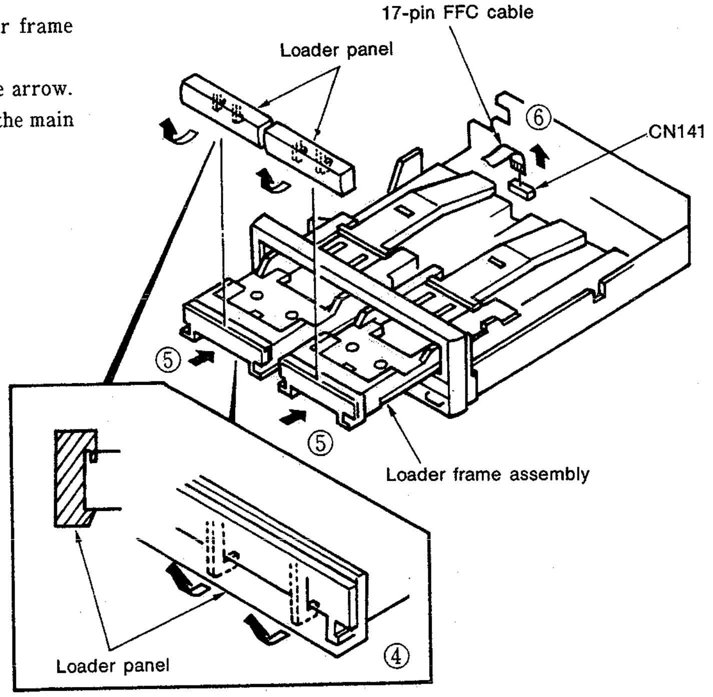
③ Use your finger to push out the loader frame assembly of the play only mechanism and the REC/PB mechanism in the direction of the arrow.


Loader frame assembly
③
Play only mechanism
REC/PB mechanism
③
③

④ Release the hooks of the loader panel from the loader frame assembly in the direction of the arrow.

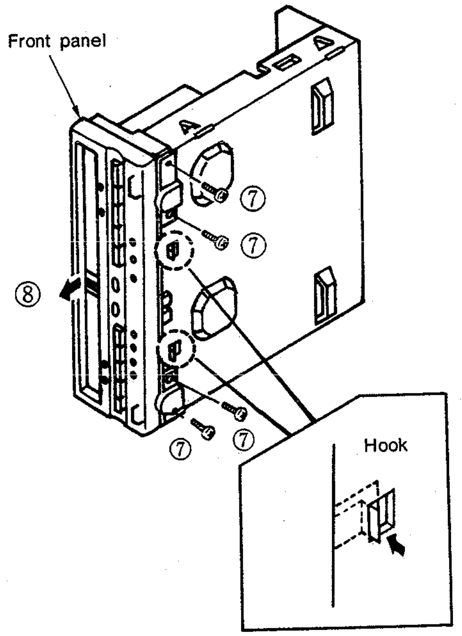
⑤ Close the loader frame assembly in the direction of the arrow.

⑥ Disconnect the CN141 FFC cable which is attached to the main unit.


17-pin FFC cable
Loader panel
⑥
CN141
⑤
⑤
Loader frame assembly
Loader panel
④

⑦ Remove the four screws which fasten the front panel.

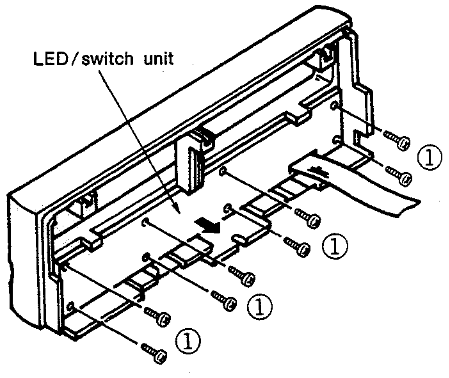
⑧ While releasing the hooks of the front panel from the chassis, remove the front panel in the direction of the arrow.


Front panel
⑦
⑦
⑧
⑦
⑦
Hook

2. Removing the Various Units

LED/Switch Units (2U-2556-2)

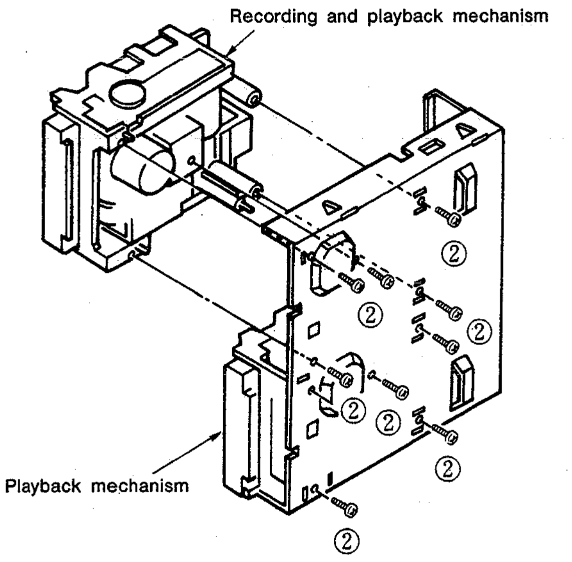
① Remove the eight screws which fasten the LED/switch units.


LED/switch unit
①
①
①
①

3. Removing the Cassette Mechanism

② Remove the ten screws which fasten the cassette mechanism.

③ Disconnect the connectors which are connected from the various boards.

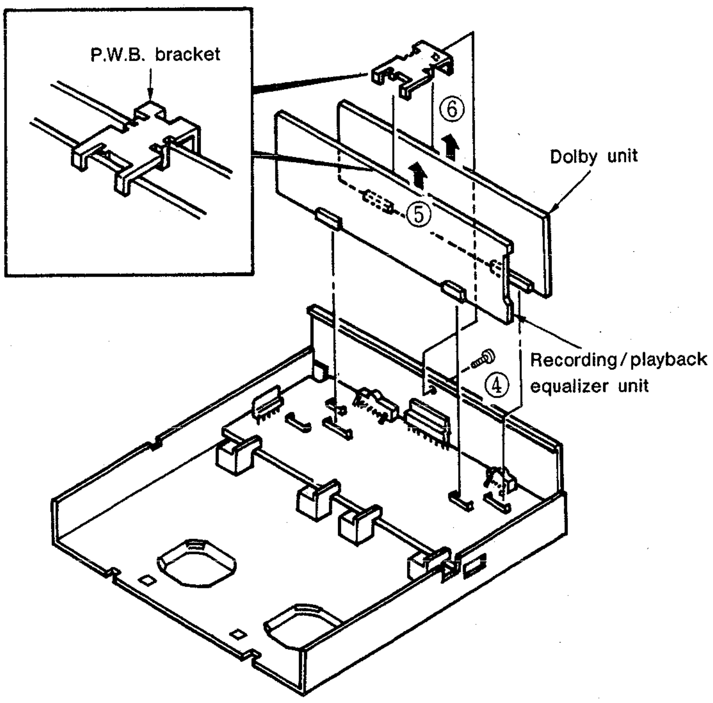

Recording and playback mechanism
②
②
②
②
②
②
Playback mechanism
②

Recording/Playback Equalizer Unit (2U-2556-4), Dolby Unit (2U-2556-3)

④ Remove the screw which fastens the P.W.B. bracket.

⑤ Pull off the recording/playback equalizer unit from the connector in the direction of the arrow.

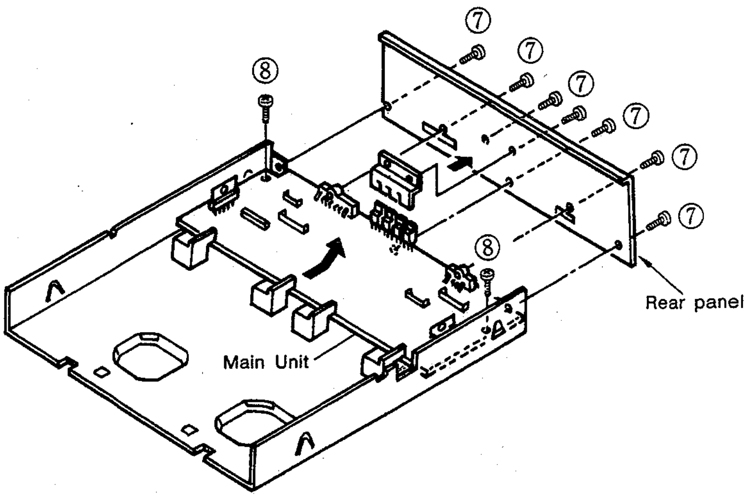
⑥ Pull off the Dolby unit from the connector in the direction of the arrow.


P.W.B. bracket
⑥
Dolby unit
⑤
④
Recording/playback equalizer unit

Main Unit (2U-2556-1)

⑦ Remove the seven screws which fasten the rear panel.

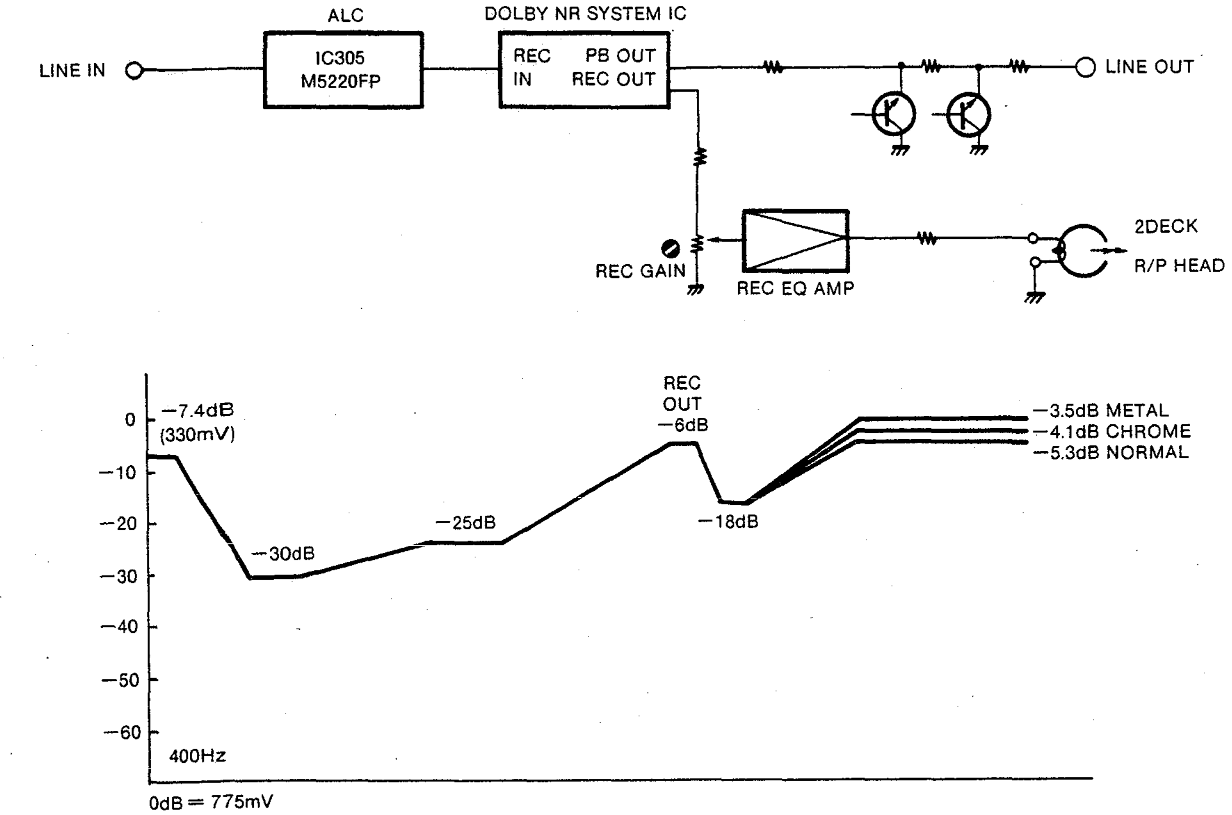
⑧ Remove the two screws which fasten the main unit and remove the main unit in the direction of the arrow.


⑦
⑦
⑧
⑦
⑦
⑦
⑦
⑧
Rear panel
Main Unit

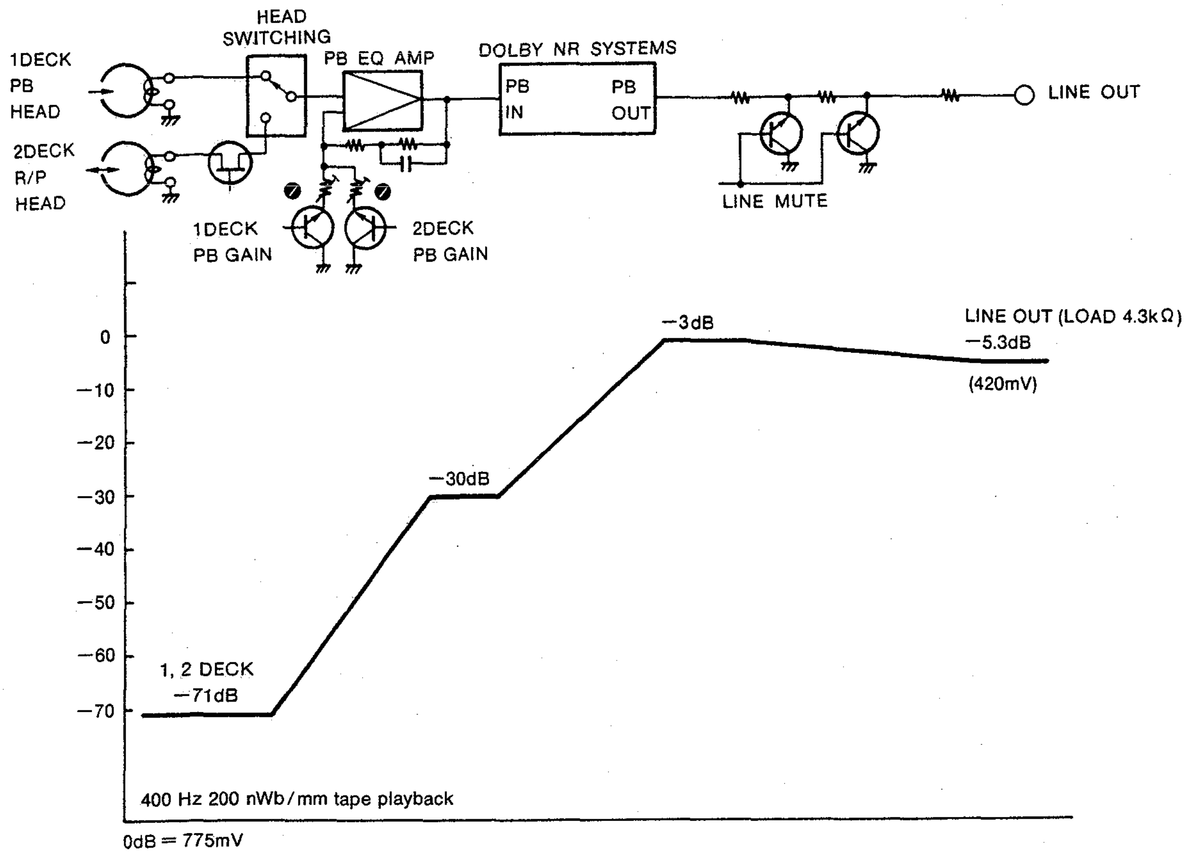
CASSETTE DECK SECTION

LEVEL DIAGRAM

(Recording)

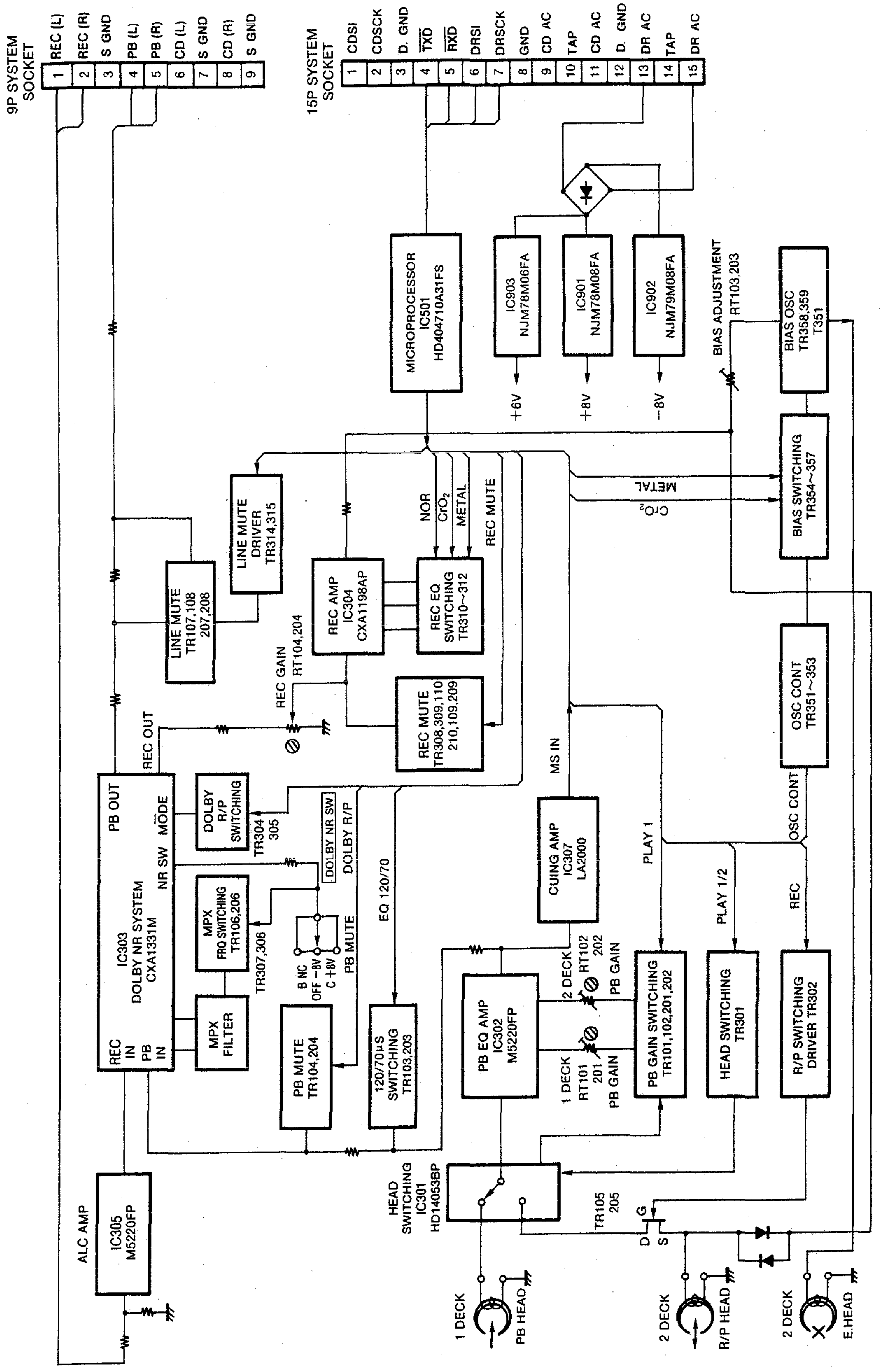

ALC
DOLBY NR SYSTEM IC
LINE IN
IC305
M5220FP
REC IN
PB OUT
REC OUT
LINE OUT
REC GAIN
REC EQ AMP
2DECK
R/P HEAD
0
−10
−20
−30
−40
−50
−60
−7.4dB
(330mV)
−30dB
−25dB
REC OUT
−6dB
−18dB
−3.5dB METAL
−4.1dB CHROME
−5.3dB NORMAL
400Hz
0dB = 775mV

(Playback)


1DECK
PB
HEAD
2DECK
R/P
HEAD
HEAD SWITCHING
PB EQ AMP
DOLBY NR SYSTEMS
PB IN
PB OUT
LINE OUT
LINE MUTE
1DECK
PB GAIN
2DECK
PB GAIN
0
−10
−20
−30
−40
−50
−60
−70
1, 2 DECK
−71dB
−30dB
−3dB
LINE OUT (LOAD 4.3kΩ)
−5.3dB
(420mV)
400 Hz 200 nWb/mm tape playback
0dB = 775mV

CASSETTE DECK SECTION

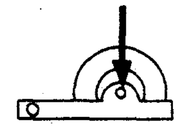
BLOCK DIAGRAM


9P SYSTEM SOCKET
1 REC (L)
2 REC (R)
3 S GND
4 PB (L)
5 PB (R)
6 CD (L)
7 S GND
8 CD (R)
9 S GND
15P SYSTEM SOCKET
1 CDSI
2 CDSCK
3 D. GND
4 TXD
5 RXD
6 DRSI
7 DRSCK
8 GND
9 CD AC
10 TAP
11 CD AC
12 D. GND
13 DR AC
14 TAP
15 DR AC
MICROPROCESSOR IC501 HD404710A31FS
IC903 NJM78M06FA
+6V
IC901 NJM78M08FA
+8V
IC902 NJM79M08FA
−8V
BIAS ADJUSTMENT RT103,203
BIAS OSC TR358,359 T351
BIAS SWITCHING TR354~357
METAL
CrO₂
NOR
CrO₂
METAL
REC MUTE
LINE MUTE DRIVER TR314,315
LINE MUTE TR107,108 207,208
REC AMP IC304 CXA1198AP
REC EQ SWITCHING TR310~312
REC GAIN RT104,204
REC MUTE TR308,309,110 210,109,209
OSC CONT TR351~353
REC OUT
PB OUT
MODE
NR SW
IC303 DOLBY NR SYSTEM CXA1331M
REC IN
PB IN
DOLBY R/P SWITCHING
TR304 305
MPX FRQ SWITCHING TR106,206
TR307,306
MPX FILTER
DOLBY NR SW
DOLBY R/P
B NC
OFF −8V
C +8V
PB MUTE
EQ 120/70
PB MUTE TR104,204
120/70µS SWITCHING TR103,203
MS IN
CUING AMP IC307 LA2000
PLAY 1
OSC CONT
PLAY 1/2
REC
PB EQ AMP IC302 M5220FP
2 DECK RT102 202 PB GAIN
1 DECK RT101 201 PB GAIN
PB GAIN SWITCHING TR101,102,201,202
HEAD SWITCHING TR301
R/P SWITCHING DRIVER TR302
ALC AMP
IC305 M5220FP
HEAD SWITCHING IC301 HD14053BP
TR105 205
G
D
S
1 DECK
PB HEAD
2 DECK
R/P HEAD
2 DECK
E.HEAD

ADJUSTMENT

● Mechanism Measurements

Measurement item	Standard value	Remarks
Winding torque (PLAY)	35~70 gcm	SONY TW-2111 for forward, TW-2121 for reverse
Fast-forward and rewind torque	70~180 gcm	SONY TW-2231
Back tension torque	$2^{+2.3}_{-1.3}$ gcm	SONY TW-2111 for forward, TW-2121 for reverse
Pinch roller pressure	270 ± 50 g	See diagram at right
Fast-forward and rewind time	110 ± 15 s	C-60



With the deck in the play mode, apply force with the tension gauge in the direction of the arrow and read the value at which the pinch roller stops rotating.

● ELECTRICAL ADJUSTMENTS

● Preparations Before Adjustments

1. Measuring Instruments Necessary for Adjustments

- Screwdriver: Small flat-bladed screwdriver for variable resistors
- Low frequency oscillator
- Attenuator
- V.T.V.M.
- Oscilloscope
- Frequency counter
- Test tapes (TEAC MTT-111, MTT-114, MTT-150, DENON HDX/60, or equivalent)
  A-BEX TCC-111, TCC-153, TCC-130
- Load resister 47kohm 2pcs. (A-BEX, TC-111, TCC-153, TCC-130)

● Adjustment notes

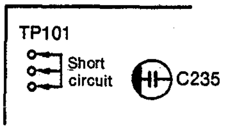
① Before adjusting, wipe the surface of the heads, the capstans, and the pinch rollers with a piece of gauze moistened with alcohol.

② Demagnetize the playback, recording, and erasure heads with a head eraser.

③ Completely demagnetize the adjustment screwdriver.

④ Unless otherwise specified, set the switches at the following positions and use the P.B Terminal for the input, and TP102 of the 2U-2556B-3 (Dolby unit) for the output.
DOBLY NR SW: OFF

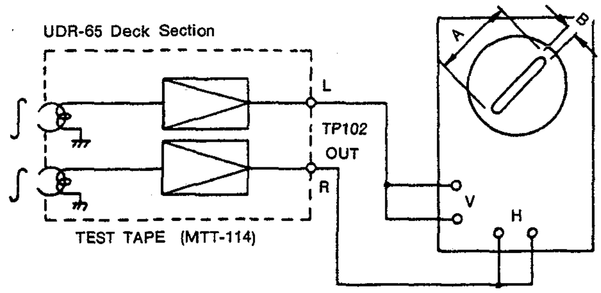
⑤ Use an alligator clip cord to short circuit TP-101 of the 2U-2556-3 Dolby unit as shown in the diagram to the right and on Page 83.



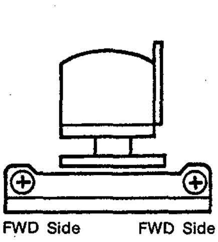
2. Playback adjustments

2-1 Azimuth adjustment

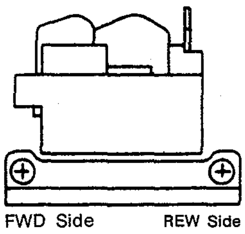
Play back the (TEAC MTT-114) test tape and turn the azimuth adjustment scrw to yield maximum values for the left and right channels. Lock the screw.



1 Deck



2 Deck



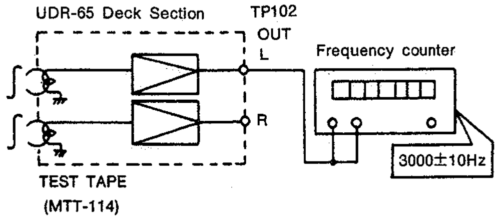
CASSETTE DECK SECTION

2-2 Tape speed check and adjustment

- Connect the frequency counter to TP-102.

① Play the test tape (MTT-111) on deck 1 and once tape transport has stabilized, adjust normal-speed-adjustment variable resistor (motor Variable Resistor) to yield 3,000 Hz ± 10 Hz.

② Using the same procedure on deck 2, adjust variable resistor (motor Variable Resistor).


UDR-65 Deck Section
TP102
OUT
L
R
Frequency counter
3000±10Hz
TEST TAPE
(MTT-114)

NOTE: Use the central portion of the test tape; not the beginning or end of the winding.

2-3 Playback level check and adjustment

Play a Dolby reference level tape (TEAC MTT-150) and check that the voltage of the left and right monitor outputs of TP-102 on the 2U-2556-3 Dolby unit is within 548 mV± 1 dB.

If it is not within this range, the playback level requires adjustment.

NOTE: When adjusting deck 1, the playback level of deck 2 also changes; therefore, the playback level of deck 2 should be readjusted.

- For deck 1, adjust: RT101 (Left channel), and RT201 (right channel)
- For deck 2, adjust: RT102 (Left channel), and RT202 (right channel)

Caution: Always adjust the playback level starting from the left deck first.

3. Recording adjustments (deck 2 only)

3-1 Overall frequency response adjustment for recording and playback

Load a blank DENON HDX/60 tape for adjustment purposes and record and play it back, adjusting the input attenuators of the 1 kHz and 10 kHz signals to yield a left and right monitor output voltage of 54.8 mVat TP102 of the 2U-2556B-3 deck unit. Adjust so that the 10 kHz level is about +0.5 dB with respect to 1 kHz, and the overall response is within the range shown in the diagram below.

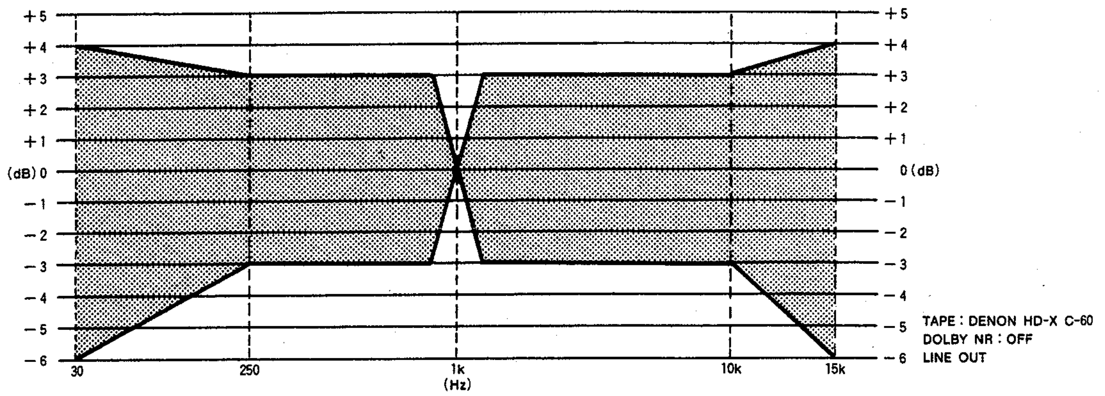
- If the 10 kHz output is larger than the 1 kHz output, turn RT103 (left channel) and RT203 (right channel) counterclockwise, and if it is smaller, turn these controls clockwise.

3-2 Recording level check and adjustment

Load a blank DENON HDX/60 tape for adjustment purposes and check that the voltmeter indication is within the 54.8 mV ± 1 dB range when a 1 kHz signal is recorded and played back.

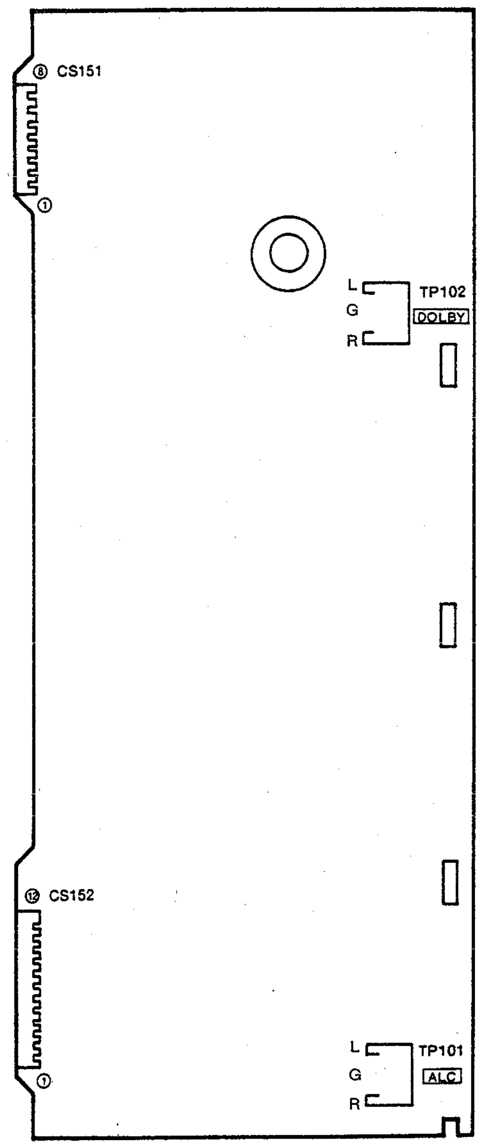
If it is not within this range, the recording level requires adjustment.

- If the level at the time of playing back the recording is higher than at the time of recording, turn RT104 (left channel) and RT204 (right channel) counterclockwise, and if lower, turn these controls clockwise.

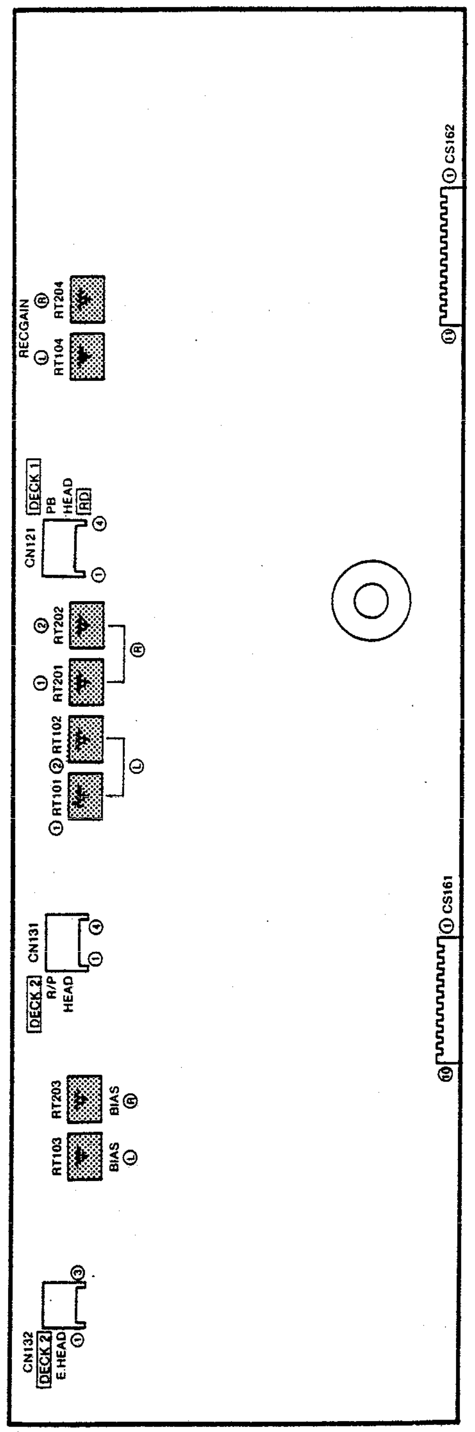


OUTLINE DIAGRAM OF ADJUSTMENT LOCATION

2U-2556-3 DOLBY UNIT (Component Side)


⑧ CS151
①
L
G
R
TP102
DOLBY
⑫ CS152
①
L
G
R
TP101
ALC

2U-2556-4 REC/PB EQ. UNIT (Component Side)

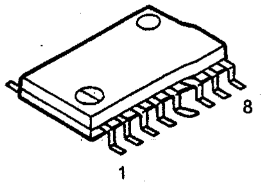

① CS162
⑪
RECGAIN
Ⓛ RT104
Ⓡ RT204
CN121
DECK 1
PB HEAD
RD
④
①
② RT202
① RT201
Ⓡ
② RT102
① RT101
Ⓛ
CN131
DECK 2
R/P HEAD
④
①
① CS161
⑪
RT203
BIAS Ⓡ
RT103
BIAS Ⓛ
CN132
DECK 2
E.HEAD
③
①

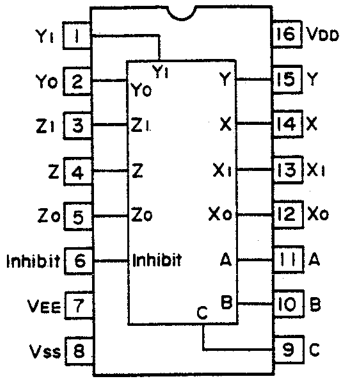
CASSETTE DECK SECTION

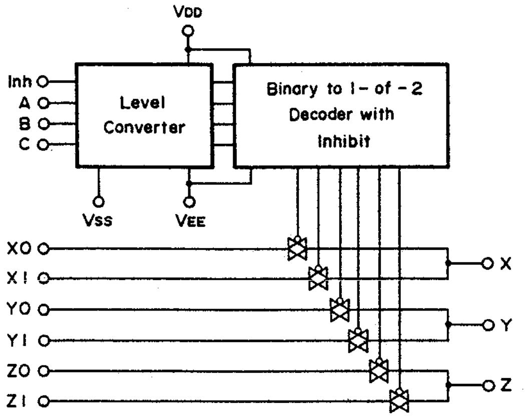
SEMICONDUCTORS

● IC's

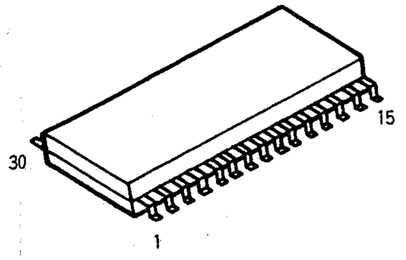
D14053BFP (IC301)

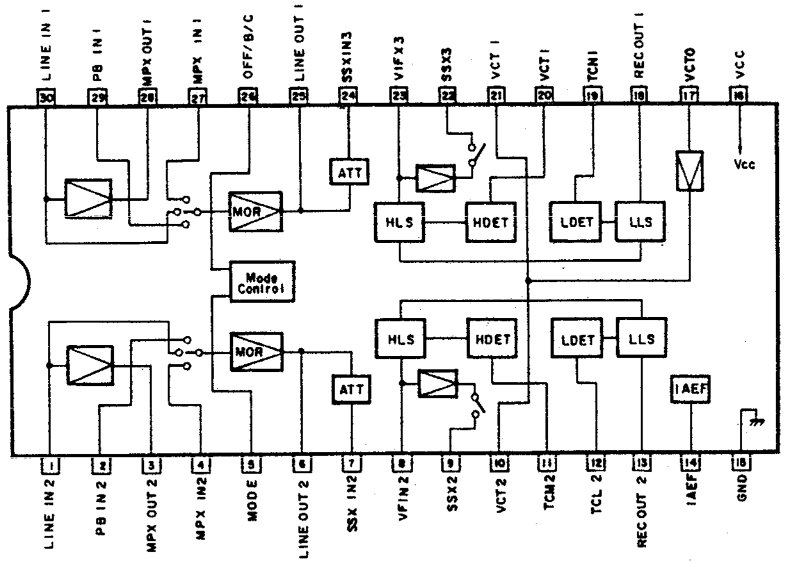



Y1 1
Y0 2
Z1 3
Z 4
Z0 5
Inhibit 6
VEE 7
Vss 8
16 VDD
15 Y
14 X
13 X1
12 X0
11 A
10 B
9 C
Y1
Y0
Y
Z1
X
Z
X1
Z0
X0
Inhibit
A
B
C

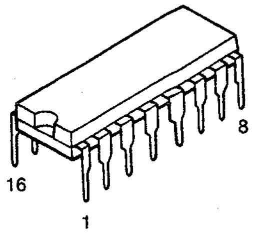

VDD
Inh
A
B
C
Level Converter
Binary to 1-of-2 Decoder with Inhibit
Vss
VEE
X0
X1
Y0
Y1
Z0
Z1
X
Y
Z

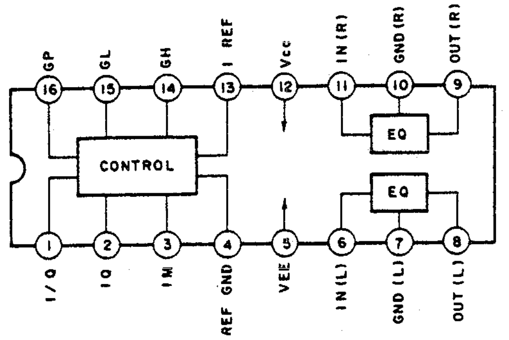
CXA1331M (IC303)



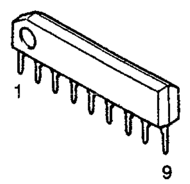

LINE IN 1
PB IN 1
MPX OUT 1
MPX IN 1
OFF/B/C
LINE OUT 1
SSXIN3
VIFX3
SSX3
VCT 1
VCT1
TCN1
REC OUT 1
VCTO
VCC
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
ATT
MOR
HLS
HDET
LDET
LLS
Vcc
Mode Control
MOR
HLS
HDET
LDET
LLS
ATT
IAEF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
LINE IN 2
PB IN 2
MPX OUT 2
MPX IN2
MODE
LINE OUT 2
SSX IN2
VFIN2
SSX2
VCT2
TCM2
TCL 2
REC OUT 2
IAEF
GND

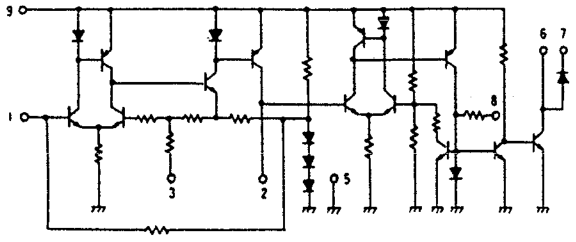
CXA1198AP (IC304)



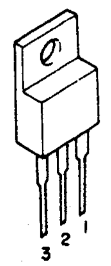

GP
GL
GH
I REF
Vcc
IN (R)
GND (R)
OUT (R)
16
15
14
13
12
11
10
9
CONTROL
EQ
EQ
1
2
3
4
5
6
7
8
I/O
IO
IM
REF GND
VEE
IN (L)
GND (L)
OUT (L)

LA2000 (IC307)



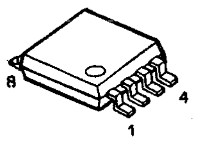


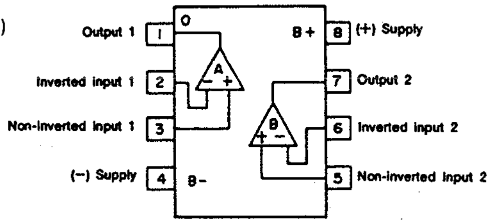
NJM78M06FA (S) (IC903)
NJM78M08FA (S) (IC901)
(Three-pin positive voltage supply)



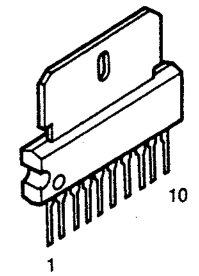
1 : Output
2 : GND
3 : Input

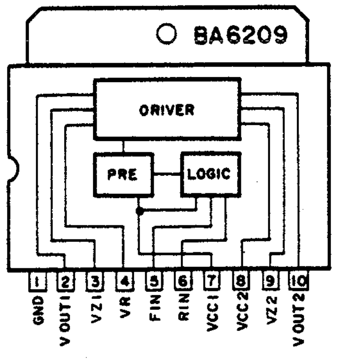
M5220FP (IC302, 305)



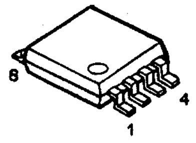

Output 1
Inverted input 1
Non-inverted input 1
(−) Supply
1
2
3
4
0
B+
B−
A
B
8
7
6
5
(+) Supply
Output 2
Inverted input 2
Non-inverted input 2

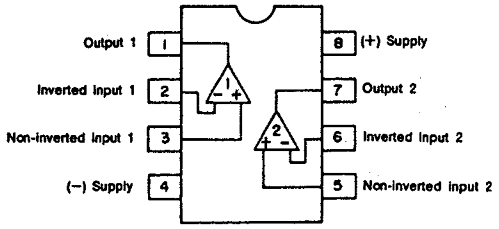
BA6209 (IC601, 651)
Reversible motor driver



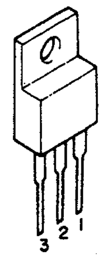

BA6209
DRIVER
PRE
LOGIC
1
2
3
4
5
6
7
8
9
10
GND
V OUT1
VZ1
VR
FIN
RIN
VCC1
VCC2
VZ2
V OUT2

BA15218F (IC306)




Output 1
Inverted input 1
Non-inverted input 1
(−) Supply
1
2
3
4
1
2
8
7
6
5
(+) Supply
Output 2
Inverted input 2
Non-inverted input 2

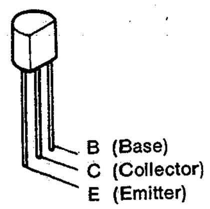
NJM79M08FA (IC902)
(Three-pin negative voltage supply)



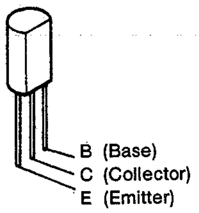
1 : Output
2 : Input
3 : GND

Transistors

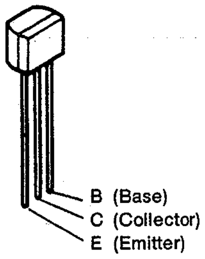
2SA933S(S)


B (Base)
C (Collector)
E (Emitter)

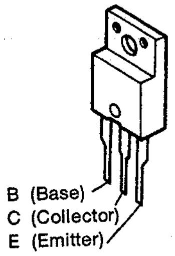
2SB562(C)


B (Base)
C (Collector)
E (Emitter)

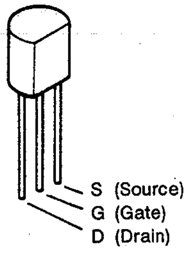
2SC1740S(S)

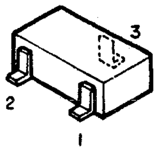

B (Base)
C (Collector)
E (Emitter)

2SC3852


B (Base)
C (Collector)
E (Emitter)

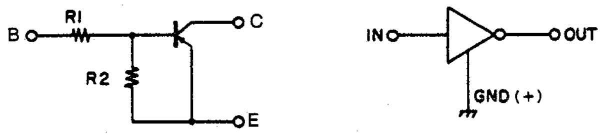
2SK373(Y) (FET)


S (Source)
G (Gate)
D (Drain)



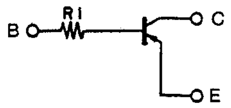
1 : Emitter
2 : Base
3 : Collector

DTA EK Series


B
R1
R2
C
E
IN
OUT
GND (+)

	R1	R2
DTA114EK	10k ohm	10k ohm
DTA144EK	47k ohm	47k ohm

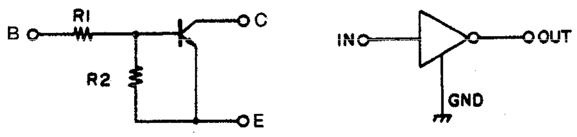
DTC TK Series



	R1
DTC323TK	2.2k ohm

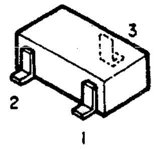
DTA114EK
DTA143EK } PNP Type
DTC114EK
DTC124EK
DTC144EK } NPN Type
DTC323TK

DTC EK Series


B
R1
R2
C
E
IN
OUT
GND

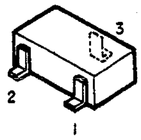
	R1	R2
DTC114EK	10k ohm	10k ohm
DTC124EK	22k ohm	22k ohm
DTC144EK	47k ohm	47k ohm

2SA1037K(S/R)
2SC2412K(S)
2SC3326(A/B)

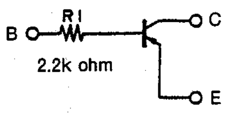


1 : Emitter
2 : Base
3 : Collector

RN1444

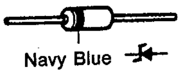


1 : Emitter
2 : Base
3 : Collector

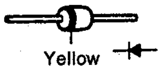

B
R1
2.2k ohm
C
E

Diodes

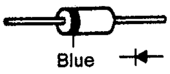
HZS4B-1
HZS6A-1
HZS6C-1
HZS7C-1
HZS9B-1
HZS12A-1



1SS254

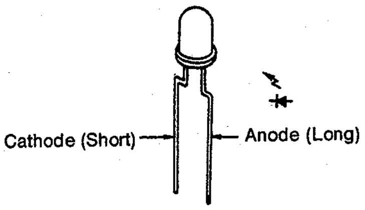


1SR35-200A



LED ASS'Y

SLR-34MC70F (Green)
SLR-34VC70F (Red)

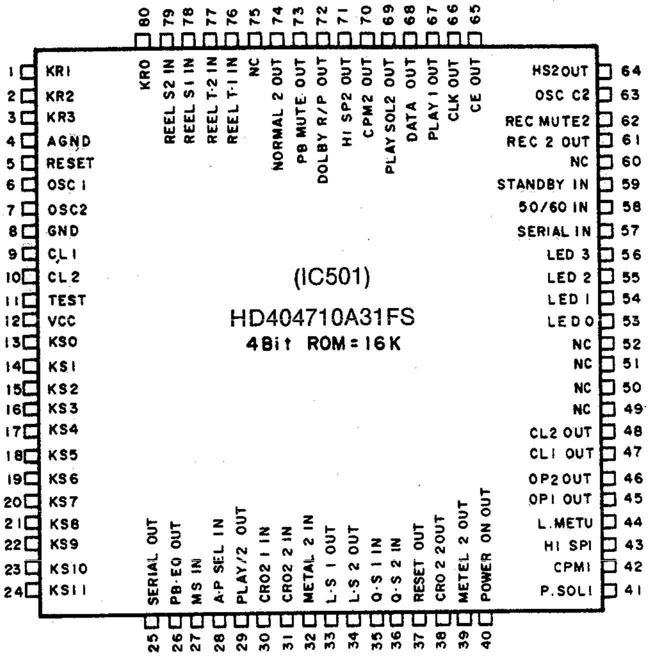

Cathode (Short)
Anode (Long)

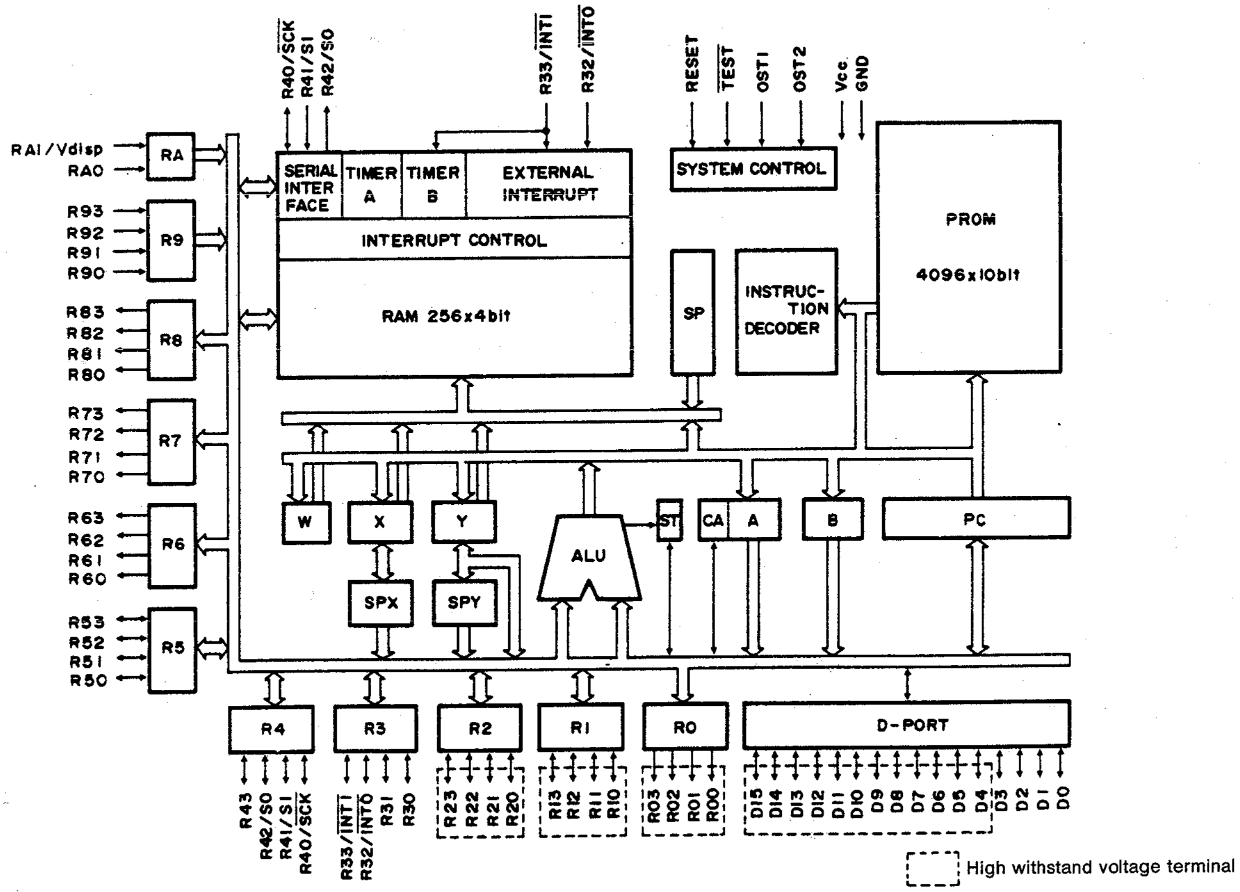
CASSETTE DECK SECTION

MICROPROCESSOR DOCUMENTATION

● Control Circuits for the Deck

HD404710A31FS : 262 1820 201 (IC501)
(CMOS 4-bit single-clip microprocessor)


(IC501)
HD404710A31FS
4Bit ROM=16K
1 KR1
2 KR2
3 KR3
4 AGND
5 RESET
6 OSC 1
7 OSC2
8 GND
9 CL1
10 CL2
11 TEST
12 VCC
13 KS0
14 KS1
15 KS2
16 KS3
17 KS4
18 KS5
19 KS6
20 KS7
21 KS8
22 KS9
23 KS10
24 KS11
25 SERIAL OUT
26 PB-EQ OUT
27 MS IN
28 A-P SEL IN
29 PLAY/2 OUT
30 CRO2 1 IN
31 CRO2 2 IN
32 METAL 2 IN
33 L-S 1 OUT
34 L-S 2 OUT
35 Q-S 1 IN
36 Q-S 2 IN
37 RESET OUT
38 CRO 2 2OUT
39 METEL 2 OUT
40 POWER ON OUT
41 P.SOL1
42 CPM1
43 HI SP1
44 L.METU
45 OP1 OUT
46 OP2 OUT
47 CL1 OUT
48 CL2 OUT
49 NC
50 NC
51 NC
52 NC
53 LED 0
54 LED 1
55 LED 2
56 LED 3
57 SERIAL IN
58 50/60 IN
59 STANDBY IN
60 NC
61 REC 2 OUT
62 REC MUTE2
63 OSC C2
64 HS2OUT
65 CE OUT
66 CLK OUT
67 PLAY 1 OUT
68 DATA OUT
69 PLAY SOL2 OUT
70 CPM2 OUT
71 HI SP2 OUT
72 DOLBY R/P OUT
73 PB MUTE OUT
74 NORMAL 2 OUT
75 NC
76 REEL T-1 IN
77 REEL T-2 IN
78 REEL S1 IN
79 REEL S2 IN
80 KR0


R40/SCK
R41/SI
R42/SO
R33/INT1
R32/INT0
RESET
TEST
OST1
OST2
Vcc
GND
RA1/Vdisp
RA0
RA
R93
R92
R91
R90
R9
R83
R82
R81
R80
R8
R73
R72
R71
R70
R7
R63
R62
R61
R60
R6
R53
R52
R51
R50
R5
SERIAL INTER FACE
TIMER A
TIMER B
EXTERNAL INTERRUPT
INTERRUPT CONTROL
RAM 256x4bit
SYSTEM CONTROL
SP
INSTRUCTION DECODER
PROM
4096x10bit
W
X
Y
SPX
SPY
ALU
ST
CA
A
B
PC
R4
R3
R2
R1
R0
D-PORT
R43
R42/SO
R41/SI
R40/SCK
R33/INT1
R32/INT0
R31
R30
R23
R22
R21
R20
R13
R12
R11
R10
R03
R02
R01
R00
D15
D14
D13
D12
D11
D10
D9
D8
D7
D6
D5
D4
D3
D2
D1
D0
High withstand voltage terminal

●IC Pin Description

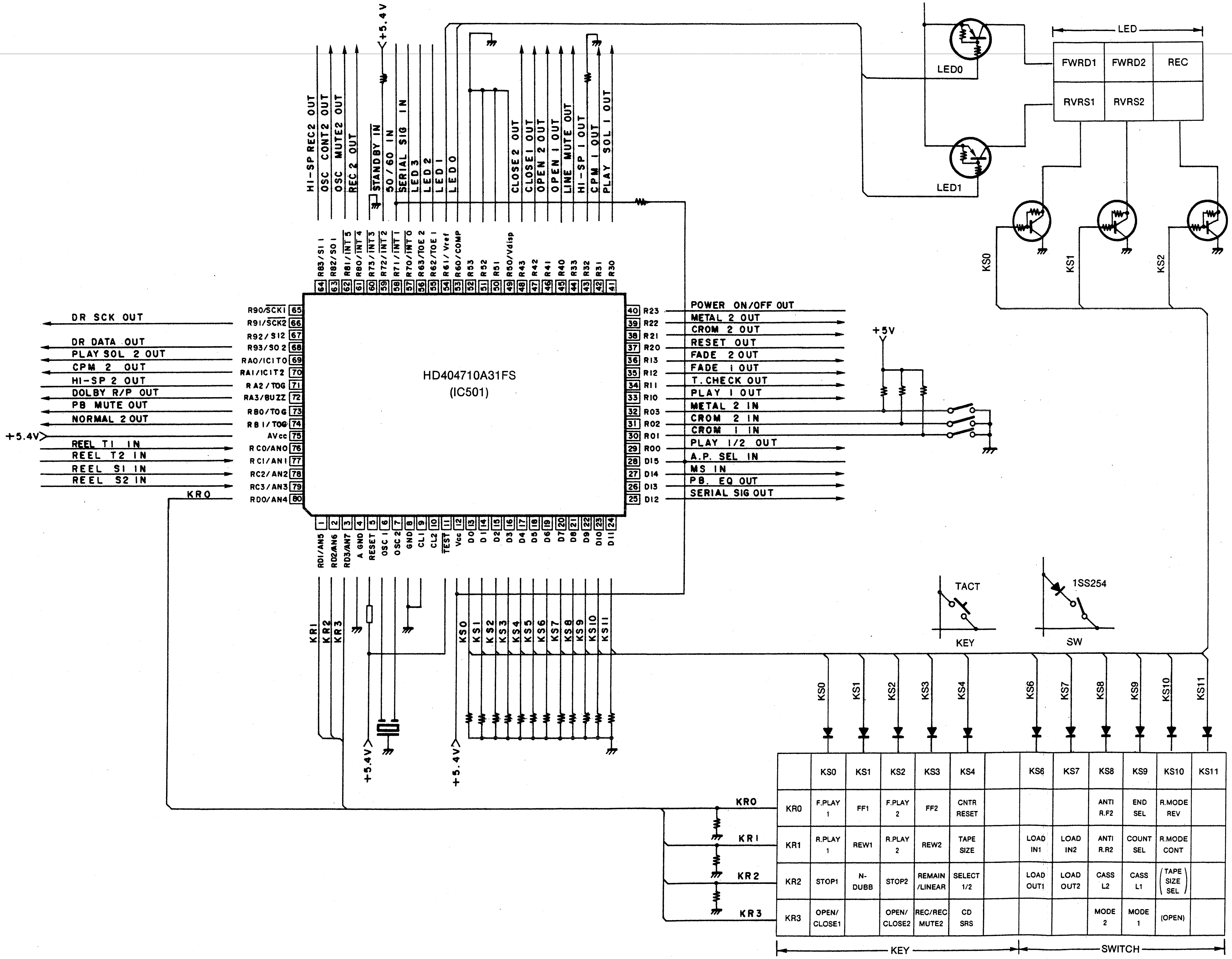
No.	Port Name	Function Name	Function
1	RD1/AN5	KR1	Key return 1 input pin
2	RD2/AN6	KR2	Key return 2 input pin
3	RD3/AN7	KR3	Key return 3 input pin
4	A GND		Ground (In)
5	RESET	RESET	Reset input pin
6	OSC1		4 MHz ceramic lock
7	OSC2		4 MHz ceramic lock
8	GND		Ground
9	CL1	NC	Ground (In)
10	CL2	NC	Open
11	$\overline{\text{TEST}}$	NC	5 V
12	VCC		5 V
13	D0	KS0	Key strobe 0 output pin
14	D1	KS1	Key strobe 1 output pin
15	D2	KS2	Key strobe 2 output pin
16	D3	KS3	Key strobe 3 output pin
17	D4	KS4	Key strobe 4 output pin
18	D5	KS5	Key strobe 5 output pin
19	D6	KS6	Key strobe 6 output pin
20	D7	KS7	Key strobe 7 output pin
21	D8	KS8	Key strobe 8 output pin
22	D9	KS9	Key strobe 9 output pin
23	D10	KS10	Key strobe 10 output pin
24	D11	KS11	Key strobe 11 output pin
25	D12	SERIAL SIG OUT	Output pin for serial communications. (Active low)
26	D13	PB EQ OUT	Playback equalizer switching output pin. "L" for 120 μs; "H" for 70 μs.
27	D14	MS IN	Inter track detection signal input pin from the IC used for inter track detection. (Active low)
28	D15	A.P. SEL IN	Auto power on/off switching Auto power on/off is performed at "H" Auto power on/off is not performed at "L"
29	R00	PLAY 1/2 OUT	This output pin displays the play condition of the mechanisms. "L" during play of mechanism 1 "H" during play of mechanism 2
30	R01	CROM 1 IN	Tape type detection switch input pin of mechanism 1 "L" for normal tape "H" for chrome or metal tape
31	R02	CROM 2 IN	Tape type detection switch input pin of mechanism 2
32	R03	METAL 2 IN	Tape type detection switch input pin of mechanism 2. Backed up.
33	R10	PLAY 1 OUT	
34	R11	T. CHECK OUT	
35	R12	FADE 1 OUT	Fade out recording control output pin.
36	R13	FADE 2 OUT	Fade out recording control output pin.
37	R20	RESET OUT	Outputs "L" for 4 seconds following the reset start up, then outputs "H" thereafter.
38	R21	CROM 2 OUT	This output pin switches the recording equalization of tape 2 to chrome. (Active high)
39	R22	METAL 2 OUT	This output pin switches the recording equalization of tape 2 to metal. (Active high)
40	R23	POWER ON/OFF OUT	This output pin controls power on/off. "H" for switching power on "L" for switching power off

CASSETTE DECK SECTION

No.	Port Name	Function Name	Function
41	R30	PLAY SOL 1 OUT	This output pin drives the solenoid of mechanism 1. (Active high)
42	R31	CPM 1 OUT	This pin outputs the pulse which drives the capstan motor of mechanism 1. (Active high)
43	R32	HI-SP 1 OUT	This output pin is used to switch to a higher speed the rotation of the capstan motor of mechanism 1 at the time of high speed copying (dubbing). (Active low)
44	R33	LINE MUTE OUT	This is the playback output mute pin. (Active high) This pin outputs "L" when tape 1 or 2 is in the play, record, record pause, record mute, or dubbing modes; "H" is output at other times.
45	R40	OPEN 1 OUT	This output pin is used to open the loader of mechanism 1. (Active high)
46	R41	OPEN 2 OUT	This output pin is used to open the loader of mechanism 2. (Active high)
47	R42	CLOSE 1 OUT	This output pin is used to close the loader of mechanism 1. (Active high)
48	R43	CLOSE 2 OUT	This output pin is used to close the loader of mechanism 2. (Active high)
49	R50/Vdisp	NC	Ground (In)
50	R51	NC	Ground (In)
51	R52	NC	Ground (In)
52	R53	NC	Ground (In)
53	R60/COMP	LED 0	Output pin for mode display drive. (Active low)
54	R61/Vref	LED 1	Output pin for mode display drive. (Active low)
55	R62/TOE1	LED 2	Output pin for mode display drive. (Active low)
56	R63/TOE2	LED 3	Output pin for mode display drive. (Active low)
57	R70/INT0	SERIAL SIG IN	Input pin for serial communications. (Active low)
58	R71/INT1	50/60 IN	50/60 Hz pulse input pin
59	R72/INT2	$\overline{\text{STANDBY}}$ IN	This input pin sets the microprocessor to the standby mode.
60	R73/INT3	NC	Ground (In)
61	R80/INT4	REC 2 OUT	Tape 2 recording mode output pin. "H" at the time of the recording mode.
62	R81/INT5	REC MUTE 2 OUT	This output pin controls the muting of the recording amplifier of tape 2. (Active high)
63	R82/SO1	OSC CONT 2 OUT	This output pin controls the bias oscillation of tape 2. (Active low)
64	R83/SI1	HI-SP REC 2 OUT	This output pin is used for switching the time constant of the signal system at the time of high speed dubbing (copying).
65	R90/$\overline{\text{SCK1}}$		(Open)
66	R91/$\overline{\text{SCK2}}$	DR SCK OUT	Communications clock output pin for the display.
67	R92/SI2		(Open)
68	R93/SO2	DR DATA OUT	Communications data output pin for the display.
69	RA0/ICT0	PLAY SOL 2 OUT	This outputs the pulse which drives the solenoid of mechanism 2. (Active high)
70	RA1/ICT2	CPM 2 OUT	This pin outputs the pulse which drives the capstan motor of mechanism 2. (Active high)
71	RA2/TOG	HI-SP 2 OUT	This output pin is used to switch to a higher speed the rotation of the capstan motor of mechanism 2 at the time of high speed copying (dubbing).
72	RA3/BUZZ	DOLBY R/P OUT	This output pin switches the Dolby recording/playback mode.
73	RB0/TOG	PB MUTE OUT	Muting output pin of the playback equalizer.
74	RB1/TOG	NORMAL 2 OUT	This output pin switches the recording equalization of tape 2 to normal. (Active high)
75	AVCC	NC	5 V
76	RC0/AN0	REEL T1 IN	Reel pulse take-up 1 input pin.
77	RC1/AN1	REEL T2 IN	Reel pulse take-up 2 input pin.
78	RC2/AN2	REEL S1 IN	Reel pulse supply 1 input pin.
79	RC3/AN3	REEL S2 IN	Reel pulse supply 2 input pin.
80	RD0/AN4	KR0	Key return 0 input.

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM

CASSETTE DECK SECTION


HD404710A31FS
(IC501)
HI-SP REC2 OUT
OSC CONT2 OUT
OSC MUTE2 OUT
REC 2 OUT
STANDBY IN
50/60 IN
SERIAL SIG IN
LED 3
LED 2
LED 1
LED 0
CLOSE 2 OUT
CLOSE 1 OUT
OPEN 2 OUT
OPEN 1 OUT
LINE MUTE OUT
HI-SP 1 OUT
CPM 1 OUT
PLAY SOL 1 OUT
+5.4V
R83/SI1 64
R82/SO1 63
R81/INT5 62
R80/INT4 61
R73/INT3 60
R72/INT2 59
R71/INT1 58
R70/INT0 57
R63/TOE2 56
R62/TOE1 55
R61/Vref 54
R60/COMP 53
R53 52
R52 51
R51 50
R50/Vdisp 49
R43 48
R42 47
R41 46
R40 45
R33 44
R32 43
R31 42
R30 41
DR SCK OUT
DR DATA OUT
PLAY SOL 2 OUT
CPM 2 OUT
HI-SP 2 OUT
DOLBY R/P OUT
PB MUTE OUT
NORMAL 2 OUT
+5.4V
REEL T1 IN
REEL T2 IN
REEL S1 IN
REEL S2 IN
KR0
R90/SCK1 65
R91/SCK2 66
R92/SI2 67
R93/SO2 68
RA0/ICIT0 69
RA1/ICIT2 70
RA2/TOG 71
RA3/BUZZ 72
RB0/TOG 73
RB1/TOG 74
AVcc 75
RC0/AN0 76
RC1/AN1 77
RC2/AN2 78
RC3/AN3 79
RD0/AN4 80
40 R23
39 R22
38 R21
37 R20
36 R13
35 R12
34 R11
33 R10
32 R03
31 R02
30 R01
29 R00
28 D15
27 D14
26 D13
25 D12
POWER ON/OFF OUT
METAL 2 OUT
CROM 2 OUT
RESET OUT
FADE 2 OUT
FADE 1 OUT
T.CHECK OUT
PLAY 1 OUT
METAL 2 IN
CROM 2 IN
CROM 1 IN
PLAY 1/2 OUT
A.P. SEL IN
MS IN
PB. EQ OUT
SERIAL SIG OUT
+5V
1 RD1/AN5
2 RD2/AN6
3 RD3/AN7
4 A GND
5 RESET
6 OSC 1
7 OSC 2
8 GND
9 CL1
10 CL2
11 TEST
12 Vcc
13 D0
14 D1
15 D2
16 D3
17 D4
18 D5
19 D6
20 D7
21 D8
22 D9
23 D10
24 D11
KR1
KR2
KR3
KS0
KS1
KS2
KS3
KS4
KS5
KS6
KS7
KS8
KS9
KS10
KS11
+5.4V
+5.4V
LED
FWRD1
FWRD2
REC
RVRS1
RVRS2
LED0
LED1
KS0
KS1
KS2
TACT
KEY
1SS254
SW
KR0
KR1
KR2
KR3
KS0
KS1
KS2
KS3
KS4
KS6
KS7
KS8
KS9
KS10
KS11

	KS0	KS1	KS2	KS3	KS4		KS6	KS7	KS8	KS9	KS10	KS11
KR0	F.PLAY 1	FF1	F.PLAY 2	FF2	CNTR RESET				ANTI R.F2	END SEL	R.MODE REV	
KR1	R.PLAY 1	REW1	R.PLAY 2	REW2	TAPE SIZE		LOAD IN1	LOAD IN2	ANTI R.R2	COUNT SEL	R.MODE CONT	
KR2	STOP1	N-DUBB	STOP2	REMAIN /LINEAR	SELECT 1/2		LOAD OUT1	LOAD OUT2	CASS L2	CASS L1	(TAPE SIZE SEL)	
KR3	OPEN/ CLOSE1		OPEN/ CLOSE2	REC/REC MUTE2	CD SRS				MODE 2	MODE 1	(OPEN)	

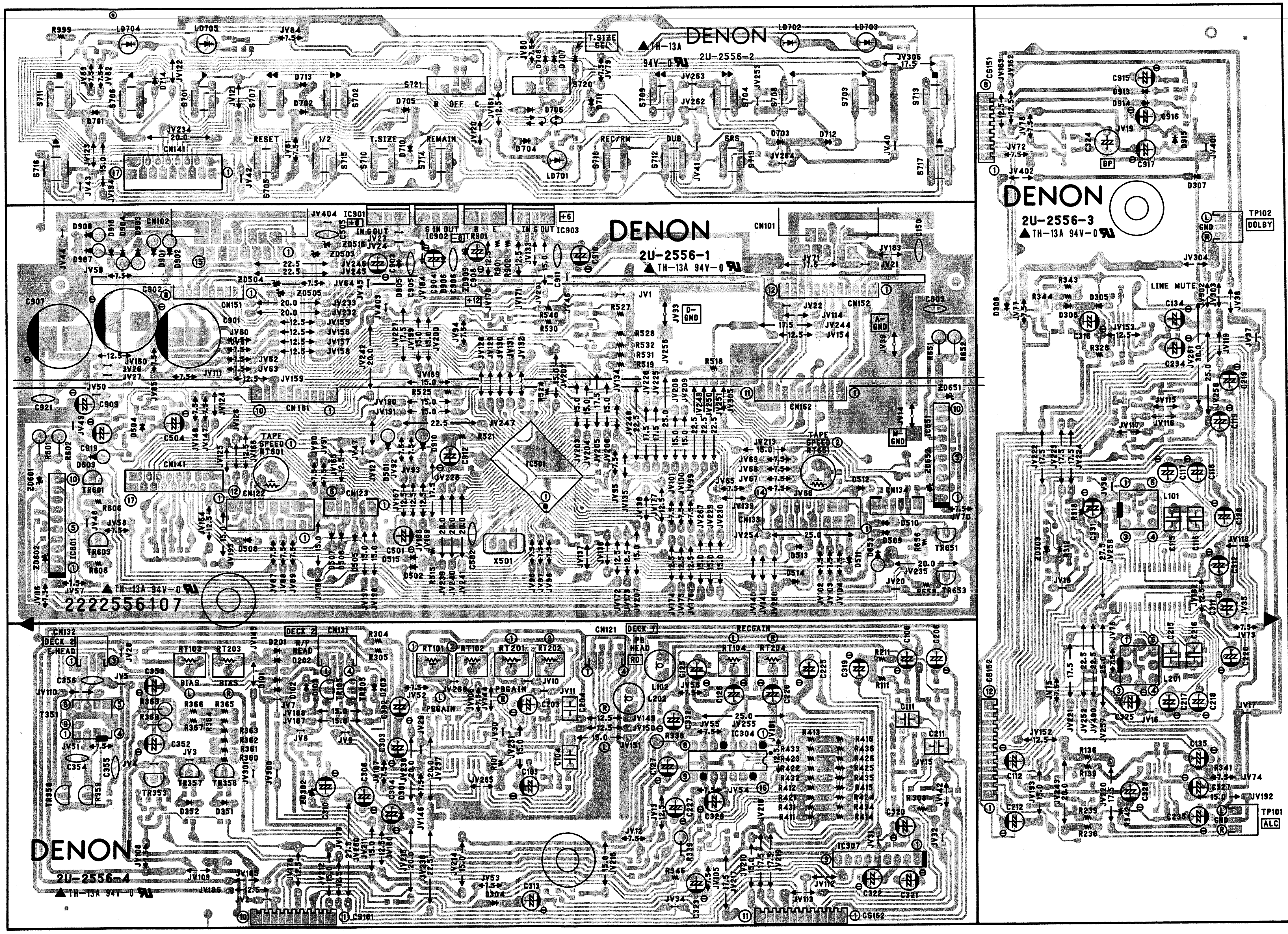
KEY SWITCH

CASSETTE DECK SECTION

PRINTED WIRING BOARD

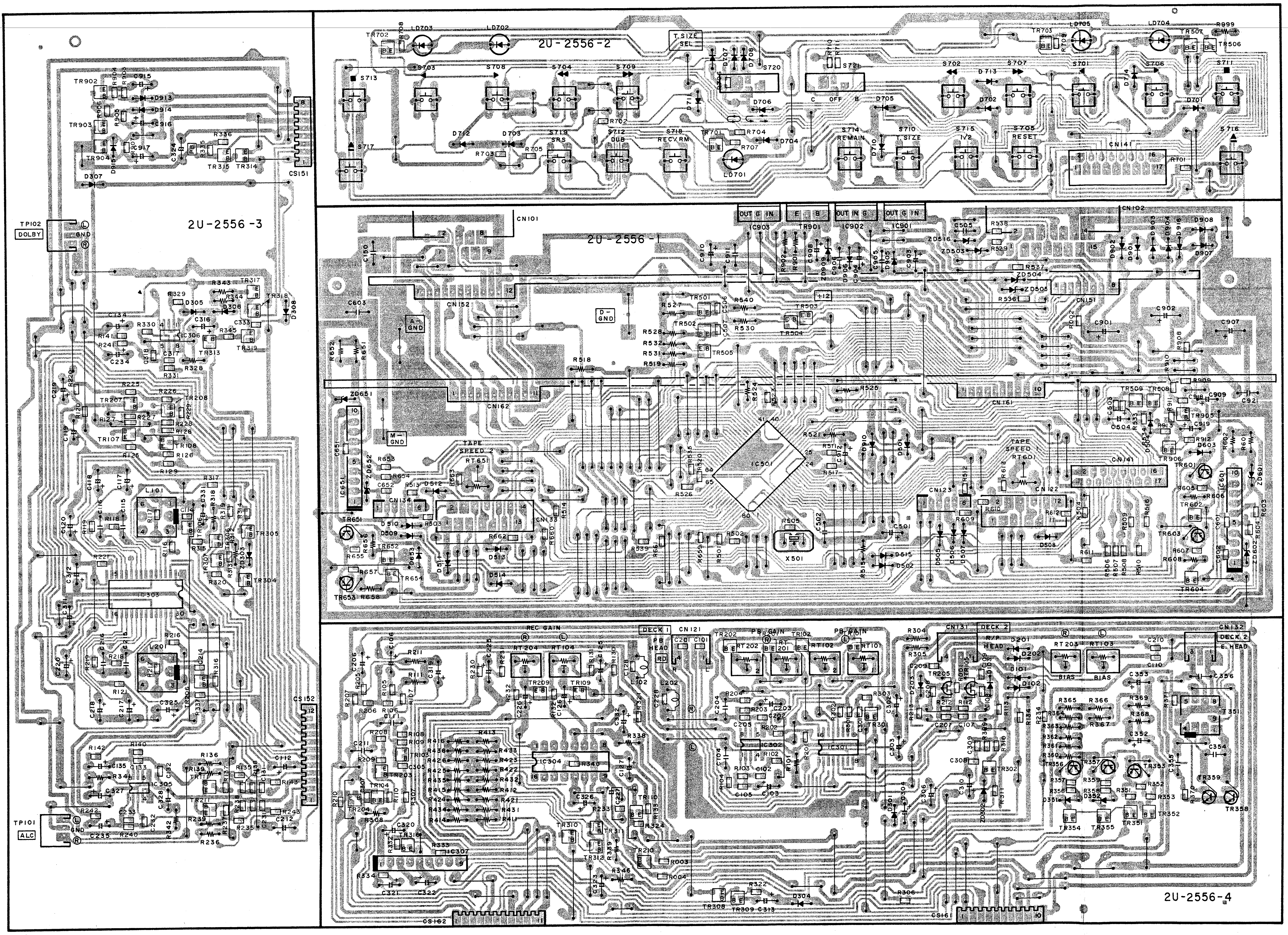
Component Side 2U-2556B DECK UNIT ASS'Y

2U-2556B	
1	Main Unit
2	LED/Switch Unit
3	Dolby Unit
4	REC/PB EQ. Unit


1
2
3
4
5
6
7
8
A
B
C
D
E
DENON
2U-2556-2
TH-13A 94V-0
T.SIZE SEL
RESET
1/2
T.SIZE
REMAIN
REC/RM
DUB
SRS
DENON
2U-2556-1
TH-13A 94V-0
IC501
TAPE SPEED RT601
TAPE SPEED RT651
X501
2222556107
DENON
2U-2556-3
TH-13A 94V-0
TP102
DOLBY
LINE MUTE
TP101
ALC
DECK 2
E.HEAD
R/P HEAD
BIAS
PBGAIN
DECK 1
PB HEAD
RECGAIN
DENON
2U-2556-4
TH-13A 94V-0

1 2 3 4 5 6 7 8

Pattern Side


2U-2556-2
2U-2556-3
2U-2556-1
2U-2556-4
T. SIZE SEL
TP102
DOLBY
GND
TP101
ALC
A-GND
D-GND
M-GND
TAPE SPEED 2
TAPE SPEED 1
REC GAIN
PB GAIN
DECK 1
DECK 2
PB HEAD
R/P HEAD
E. HEAD
BIAS
OUT G IN
OUT IN G
IC501
IC303
IC304
IC302
IC301
IC307
CN101
CN102
CN141
CN151
CN152
CN161
CN162
CS151
CS152
CS161
CS162
X501
REMAIN
T. SIZE
1/2
RESET
DUB
RECVRM
SRS

A

B

C

D

E

NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

- **Resistors**

Ex.:

RN	14K	2E	182	G	FR
Type	Shape and performance	Power	Resistance	Allowable error	Others

Type	Power	Allowable error	Others
RD : Carbon Film	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metallic oxide Film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

※ Resistance

1 8 2 ⇨ 1800 ohm = 1.8 kohm
Indicates number of zeros after effective number
2-digit effective number

- Units: ohm

1 R 2 ⇨ 1.2 ohm
1-digit effective number.
2-digit effective number, decimal point indicated by R.

- Units: ohm

※ Capacity (electrolyte only)

2 2 R ⇨ 2200 μF
Indicates number of zeros after effective number.
2-digit effective number.

- Units: μF

2 R 2 ⇨ 2.2 μF
1-digit effective number.
2-digit effective number, decimal point indicated by R.

- Units: μF

- **Capacitors**

Ex.:

CE	04W	1H	2R2	M	BP
Type	Shape and performance	Dielectric strength	Capacity	Allowable error	Others

Type	Dielectric strength	Allowable error	Others
CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80% −20%	U : UL part
CP : Oil	2A : 100V		C : CSA part
CM : Mica	2B : 125V	P : +100% −0%	W : UL-CSA type
CF : Metallized	2C : 160V		F : Lead wire forming
CH : Metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

※ Capacity (except electrolyte)

2 R 2 ⇨ 2200pF = 2200 μF = 0.002 μF
(More than 2)——Indicates number of zeros after effective number.
2-digit effective number.

- Units: μF

2 2 1 ⇨ 220pF
(0 or 1)——Indicates number of zeros after effective number.
2-digit effective number.

- Units: pF
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

2U-2556B DECK UNIT ASS'Y PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC301	262 1211 904	IC HD14053BFP	
IC302	263 0700 901	IC M5220FP	
IC303	262 1267 903	IC CXA1331M	
IC304	263 0589 009	IC CXA1198AP	
IC305	263 0700 901	IC M5220FP	
IC306	263 0615 902	IC BA15218F	
IC307	263 0621 006	IC LA2000	
IC501	262 1820 201	IC HD404710A31FS	μ-com
IC601	263 0402 005	IC BA6209	
IC651	263 0402 005	IC BA6209	
IC901	263 0815 003	IC NJM78M08FA(S)	Regulator +8 V
IC902	263 0511 006	IC NJM79M08FA	Regulator −8 V
IC903	263 0792 003	IC NJM78M06FA(S)	Regulator +6 V
TR101,102	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR103,104	273 0384 900	Transistor 2SC2412K(S)	Chip
TR105	275 0042 905	N-FET 2SK373(Y)	
TR106	269 0066 902	Transistor DTC323TK	Chip Built in R.
TR107,108	269 0125 908	Transistor RN1444	Chip Built in R.
TR109	273 0384 900	Transistor 2SC2412K(S)	Chip
TR110	269 0066 902	Transistor DTC323TK	Chip Built in R.
TR111	273 0384 900	Transistor 2SC2412K(S)	Chip
TR201,202	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR203,204	273 0384 900	Transistor 2SC2412K(S)	Chip
TR205	275 0042 905	N-FET 2SK373(Y)	
TR206	269 0066 902	Transistor DTC323TK	Chip Built in R.
TR207,208	269 0125 908	Transistor RN14444	Chip Built in R.
TR209	273 0384 900	Transistor 2SC2412K(S)	Chip
TR210	269 0066 902	Transistor DTC323TK	Chip Built in R.
TR211	273 0384 900	Transistor 2SC2412K(S)	Chip
TR301	269 0102 905	Transistor DTC124EK	Chip Built in R.
TR302	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR304～307	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR308	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR309～312	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR313	273 0384 900	Transistor 2SC2412K(S)	Chip
TR314	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR315	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR316	273 0384 900	Transistor 2SC2412K(S)	Chip
TR317	269 0047 905	Transistor DTA143EK	Chip Built in R.
TR318,319	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR351,352	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR353	271 0192 905	Transistor 2SA933S(S)	
TR354,355	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR356,357	271 0192 905	Transistor 2SA933S(S)	
TR358,359	273 0303 910	Transistor 2SC1740S(S)	
TR501,502	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR503	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR504,505	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR506,507	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR508,509	271 0238 902	Transistor 2SA1037K(S/R)	
TR601	272 0025 907	Transistor 2SB562(C)	
TR602	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR603	272 0025 907	Transistor 2SB562(C)	
TR604	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR651	272 0025 907	Transistor 2SB562(C)	
TR652	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR653	272 0025 907	Transistor 2SB562(C)	
TR654	269 0082 902	Transistor DTC114EK	Chip Built in R.
TR701～703	269 0054 901	Transistor DTC144EK	Chip Built in R.
TR901	273 0330 006	Transistor 2SC3852	
TR902	273 0348 904	Transistor 2SC3326(A/B)	
TR904	269 0083 901	Transistor DTA114EK	Chip Built in R.
TR905,906	273 0384 900	Transistor 2SC2412K(S)	Chip
D101～103	276 0531 901	Diode 1SS254	
D201～203	276 0531 901	Diode 1SS254	
D301	276 0531 901	Diode 1SS254	
D304～308	276 0531 901	Diode 1SS254	
D351,352	276 0531 901	Diode 1SS254	
D501	276 0553 905	Diode 1SR35-200A	
D502	276 0531 901	Diode 1SS254	
D504～515	276 0531 901	Diode 1SS254	
D603	276 0553 905	Diode 1SR35-200A	
D653	276 0553 905	Diode 1SR35-200A	
D701～708	276 0531 901	Diode 1SS254	
D710～714	276 0531 901	Diode 1SS254	
D901～904	276 0553 905	Diode 1SR35-200A	
D905,906	276 0531 901	Diode 1SS254	
D907,908	276 0553 905	Diode 1SR35-200A	
D910	276 0553 905	Diode 1SR35-200A	
D913～916	276 0531 901	Diode 1SS254	
ZD302	276 0461 903	Zener Diode HZS6A-1	6 V
ZD303	276 0468 906	Zener Diode HZS9B-1	9 V
ZD503～505	276 0463 901	Zener Diode HZS6C-1	6 V
ZD516	276 0463 901	Zener Diode HZS6C-1	6 V
ZD601	276 0466 908	Zener Diode HZS7C-1	7 V
ZD602	276 0456 905	Zener Diode HZS4B-1	4 V
ZD651	276 0466 908	Zener Diode HZS7C-1	7 V
ZD652	276 0456 905	Zener Diode HZS4B-1	4 V
ZD909	276 0473 904	Zener Diode HZS12A-1	12 V
LD701	393 9484 901	LED SLR-34VC70F	Red
LD702～705	393 9483 902	LED SLR-34MC70F	Green
RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type. Refer to the Scematic Diagram for those Parts.)			
R001～004	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R102	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R103	247 0013 926	Chip Carbon 270k ohm 1/10W	RM73B--274J
R104	247 0010 945	Chip Carbon 18k ohm 1/10W	RM73B--183J
R105	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R106	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R107	247 0009 914	Chip Carbon 5.1k ohm 1/10W	RM73B--512J
R108	247 0009 956	Chip Carbon 7.5k ohm 1/10W	RM73B--752J
R109	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R110	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R112	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R113	247 0015 940	Chip Carbon 2.2M ohm 1/10W	RM73B--225J
R116	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R117	247 0009 956	Chip Carbon 7.5k ohm 1/10W	RM73B--752J
R118	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R119	247 0006 988	Chip Carbon 560 ohm 1/10W	RM73B--561J
R120	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R121	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R125	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R126	247 0005 976	Chip Carbon 200 ohm 1/10W	RM73B--201J
R127,128	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R129	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R130	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R131,132	247 0009 927	Chip Carbon 5.6k ohm 1/10W	RM73B--562J
R133	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R134	247 0010 929	Chip Carbon 15k ohm 1/10W	RM73B--153J
R135	247 0012 956	Chip Carbon 130k ohm 1/10W	RM73B--134J
R137	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R138	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R140	247 0010 945	Chip Carbon 18k ohm 1/10W	RM73B--183J
R141	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R142	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R143	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R201	247 0011 960	Chip Carbon 56k ohm 1/10W	RM73B--563J
R202	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R203	247 0013 926	Chip Carbon 270k ohm 1/10W	RM73B--274J
R204	247 0010 945	Chip Carbon 18k ohm 1/10W	RM73B--183J
R205	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R206	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R207	247 0009 914	Chip Carbon 5.1k ohm 1/10W	RM73B--512J
R208	247 0009 956	Chip Carbon 7.5k ohm 1/10W	RM73B--752J
R209	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R210	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R212	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R213	247 0015 940	Chip Carbon 2.2M ohm 1/10W	RM73B--225J
R216	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R217	247 0009 956	Chip Carbon 7.5k ohm 1/10W	RM73B--752J
R218	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R219	247 0006 988	Chip Carbon 560 ohm 1/10W	RM73B--561J
R220	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R221	247 0010 987	Chip Carbon 27k ohm 1/10W	RM73B--273J
R225	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R226	247 0005 976	Chip Carbon 200 ohm 1/10W	RM73B--201J
R227,228	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R229	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R230	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R231,232	247 0009 927	Chip Carbon 5.6k ohm 1/10W	RM73B--562J
R233	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R234	247 0010 929	Chip Carbon 15k ohm 1/10W	RM73B--153J
R235	247 0012 956	Chip Carbon 130k ohm 1/10W	RM73B--134J
R237	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R238	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R240	247 0010 945	Chip Carbon 18k ohm 1/10W	RM73B--183J
R241	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J

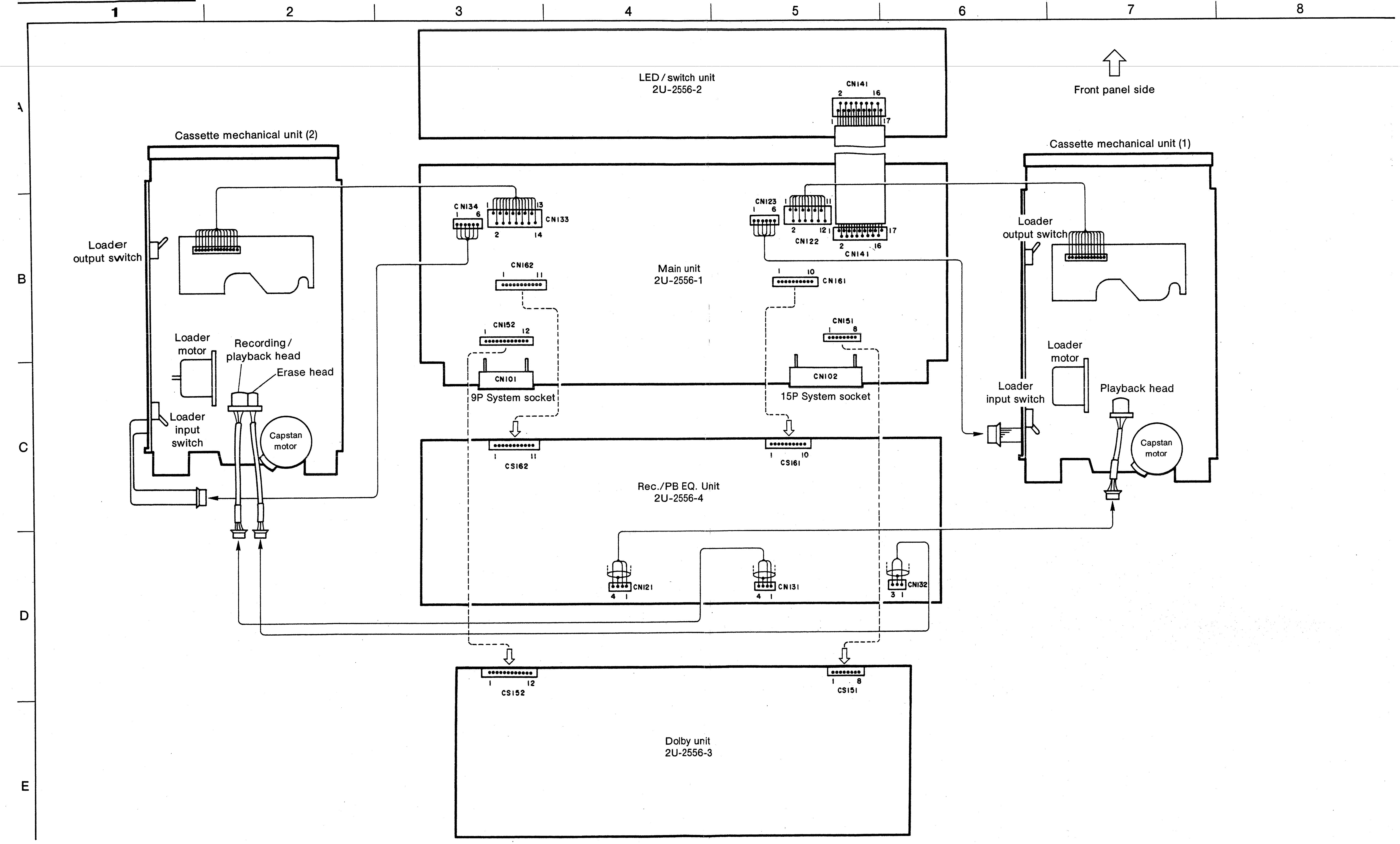
Ref. No.	Part No.	Part Name	Remarks
R242	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R243	247 0018 905	Chip Carbon 0 ohm 1/10W	RM73B--0R0K
R301	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R302	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R303	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R306	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R307	247 0010 961	Chip Carbon 22k ohm 1/10W	RM73B--223J
R309	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R310	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R311	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R313	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R314	247 0009 914	Chip Carbon 5.1k ohm 1/10W	RM73B--512J
R315	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R316	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R317	247 0010 961	Chip Carbon 22k ohm 1/10W	RM73B--223J
R319,320	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R321	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R322	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R323	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R329	247 0004 922	Chip Carbon 47 ohm 1/10W	RM73B--470J
R330	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R331	247 0011 986	Chip Carbon 68k ohm 1/10W	RM73B--683J
R332	247 0011 960	Chip Carbon 56k ohm 1/10W	RM73B--563J
R333	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R334	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
R335	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R336	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R337	247 0010 961	Chip Carbon 22k ohm 1/10W	RM73B--223J
R340	247 0010 974	Chip Carbon 24k ohm 1/10W	RM73B--243J
R345	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R351	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R352	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R353	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R356	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R357	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R358	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
R359	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R370	247 0001 983	Chip Carbon 4.7 ohm 1/10W	RM73B--4R7K
R371	247 0010 903	Chip Carbon 12k ohm 1/10W	RM73B--123J
R501～504	247 0008 928	Chip Carbon 2.2k ohm 1/10W	RM73B--222J
R505	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
R506～514	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R516,517	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R520	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R523	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R526	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R529	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R533,534	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R535	247 0009 901	Chip Carbon 4.7k ohm 1/10W	RM73B--472J
R536～538	247 0005 905	Chip Carbon 100 ohm 1/10W	RM73B--101J
R539	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R603,604	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R605	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R607	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R609	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
R610	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R611	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
R612	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R613	247 0008 957	Chip Carbon 3k ohm 1/10W	RM73B--302J
R653,654	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R655	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R657	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R659	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
R660	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J

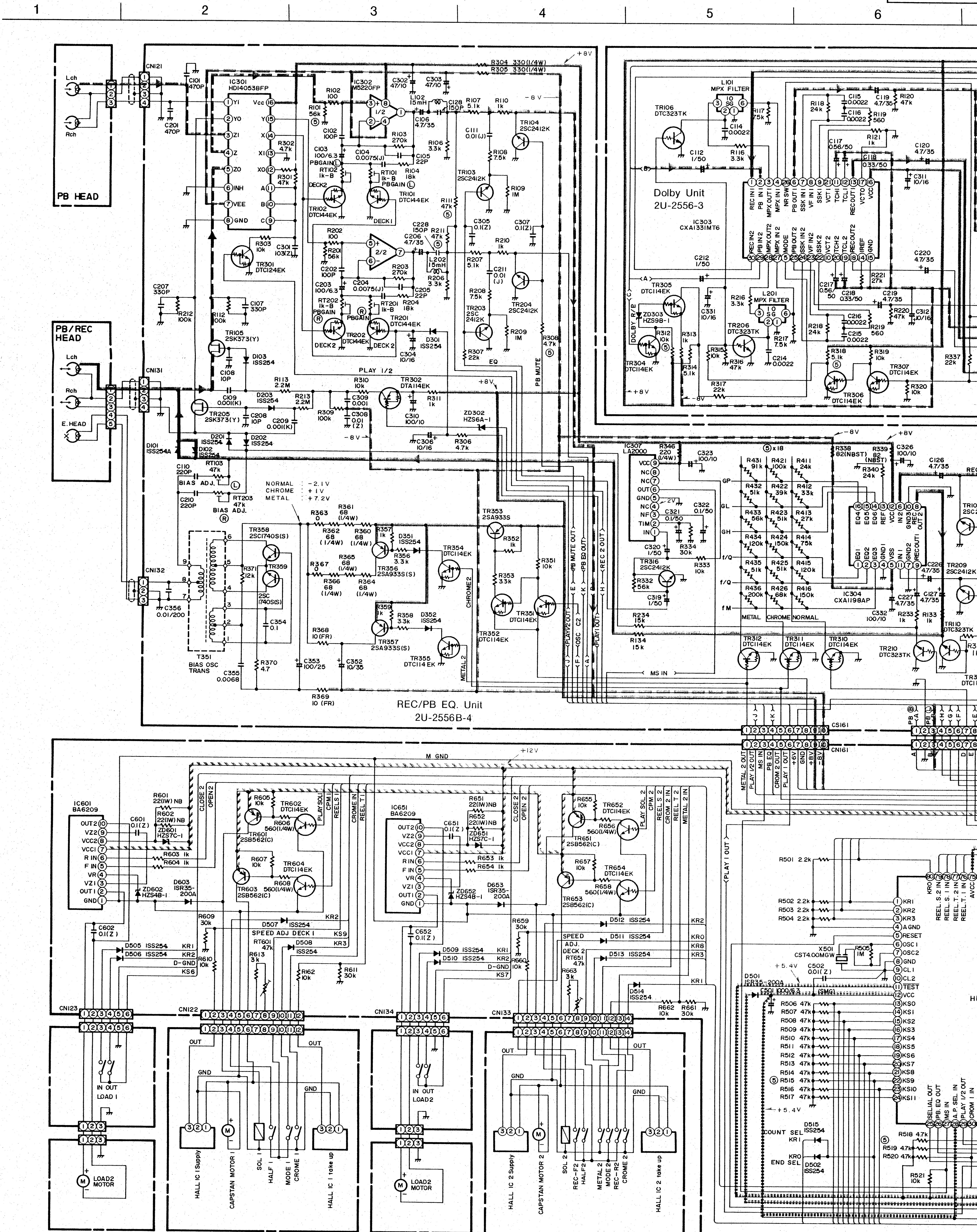
Ref. No.	Part No.	Part Name	Remarks
R661	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
R662	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R663	247 0008 957	Chip Carbon 3k ohm 1/10W	RM73B--302J
R701～706	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R707	247 0006 988	Chip Carbon 560 ohm 1/10W	RM73B--561J
R708,709	247 0006 917	Chip Carbon 300 ohm 1/10W	RM73B--301J
R710,711	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R903	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R904	247 0010 961	Chip Carbon 22k ohm 1/10W	RM73B--223J
R905	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
R906	247 0011 902	Chip Carbon 33k ohm 1/10W	RM73B--333J
R907	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R908	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
R909,910	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
R911	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
R912	247 0010 929	Chip Carbon 15k ohm 1/10W	RM73B--153J
R913	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
⚠R338,339	241 2377 921	Carbon Film 82 ohm 1/4W (NB)	RD14B2E820JNBS
⚠R368,369	241 2315 912	Fusible 10 ohm 1/4W (NB)	RD14B2E100GFRS
⚠R601,602	244 2050 904	Metal Oxide 22 ohm 1W	RS14B3A220JNBS(S)
⚠R651,652	244 2050 904	Metal Oxide 22 ohm 1W	RS14B3A220JNBS(S)
RT101,102	211 6070 003	Semi Fixed 1k ohm	V06QB102(RH0614C)
RT103	211 8005 005	Semi Fixed 47k ohm	V06QB473
RT104	211 6070 029	Semi Fixed 10k ohm	V06QB103(RH0614C)
RT201,202	211 6070 003	Semi Fixed 1k ohm	V06QB102(RH0614C)
RT203	211 8005 005	Semi Fixed 47k ohm	V06QB473
RT204	211 6070 029	Semi Fixed 10k ohm	V06QB103(RH0614C)
RT601	211 6047 023	Semi Fixed 4.7k ohm	V06PB472
RT651	211 6047 023	Semi Fixed 4.7k ohm	V06PB472
CAPACITORS GROUP			
C101	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J
C102	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C103	254 4250 929	Electrolytic 100μF/6.3V	CE04W0J101M
C104	255 1256 903	Plastic Film 0.0075μF/50V	CQ93M1H752J(MRZ)
C105	257 0003 904	Chip Ceramic 22pF/50V	CC73SL1H220J
C106	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C107	257 0005 986	Chip Ceramic 330pF/50V	CC73SL1H331J
C108	257 0002 921	Chip Ceramic 10pF/50V	CC73SL1H100D
C109	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K
C110	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J
C111	255 1212 905	Plastic Film 0.01μF/50V	CQ93M1H103J
C112	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C114	257 0009 924	Chip Ceramic 2200pF/50V	CK73B1H222K
C115,116	255 1204 900	Plastic Film 0.0022μF/50V	CQ93M1H222J
C117	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C118	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C119,120	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C125	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C126,127	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C128	257 0005 902	Chip Ceramic 150pF/50V	CC73SL1H151J
C131	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J
C132	257 0005 902	Chip Ceramic 150pF/50V	CC73SL1H151J
C133	257 0003 988	Chip Ceramic 47pF/50V	CC73SL1H470J
C134	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C135	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C201	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J
C202	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C203	254 4250 929	Electrolytic 100μF/6.3V	CE04W0J101M
C204	255 1256 903	Plastic Film 0.0075F/50V	CQ93M1H752J(MRZ)

Ref. No.	Part No.	Part Name	Remarks
C205	257 0003 904	Chip Ceramic 22pF/50V	CC73SL1H220J
C206	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C207	257 0005 986	Chip Ceramic 330pF/50V	CC73SL1H331J
C208	257 0002 921	Chip Ceramic 10pF/50V	CC73SL1H100D
C209	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K
C210	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J
C211	255 1212 905	Plastic Film 0.01μF/50V	CQ93M1H103J
C212	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C214	257 0009 924	Chip Ceramic 2200pF/50V	CK73B1H222K
C215,216	255 1204 900	Plastic Film 0.0022μF/50V	CQ93M1H222J
C217	254 4278 943	Electrolytic 0.56μF/50V	CE04W1HR56M
C218	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33M
C219,220	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C225	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C226,227	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C228	257 0005 902	Chip Ceramic 150pF/50V	CC73SL1H151J
C231	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J
C232	257 0005 902	Chip Ceramic 150pF/50V	CC73SL1H151J
C233	257 0003 988	Chip Ceramic 47pF/50V	CC73SL1H470J
C234	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C235	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C301	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C302,303	254 4252 927	Electrolytic 47μF/10V	CE04W1A470M
C304	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C305	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C306	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C307	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C308	257 0012 966	Chip Ceramic 0.01μF/50V	CK73F1H103Z
C309	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K
C310	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C311,312	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C313	254 4327 904	Electrolytic 1000μF/6.3V	CE04W0J102M(SMG)
C316	254 4252 901	Electrolytic 220μF/10V	CE04W1A220M
C317,318	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
C319,320	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C321,322	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1M
C323	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C324	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C325	254 4256 910	Electrolytic 22μF/25V	CE04W1E220M
C326	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C327,328	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C331	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C332	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C352	254 4258 918	Electrolytic 10μF/16V	CE04W1C100M
C353	254 4256 949	Electrolytic 100μF/25V	CE04W1E101M
C354	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C355	255 1210 907	Plastic Film 0.0068μF/50V	CQ93M1H682J
C356	255 1253 003	Plastic Film 0.01μF/200V	CQ92M2D103J
C501	254 4327 904	Electrolytic 1000μF/6.3V	CE04W0J102M(SMG)
C502	253 9030 963	BC Ceramic 0.01μF/25V	CK45=1E103K
C503	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C504	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M
C505	253 9031 917	BC Ceramic 0.068μF/25V	CK45=1E683K
C599	253 9031 917	BC Ceramic 0.068μF/25V	CK45=1E683K
C601,602	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C651,652	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C901	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
C902	254 4257 702	Electrolytic 3300μF/25V	CE04W1E332MC
C903,904	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C905,906	253 9031 917	BC Ceramic 0.068μF/25V	CK45=1E683K
C907	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
C908	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M
C909	254 4256 949	Electrolytic 100μF/25V	CE04W1E101M

Ref. No.	Part No.	Part Name	Remarks	
C910	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C911	253 9031 917	BC Ceramic 0.068μF/25V	CK45=1E683K	
C912	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	
C915	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M	
C916	254 4256 952	Electrolytic 220μF/25V	CE04W1E221M	
C917	254 4256 907	Electrolytic 10μF/25V	CE04W1E100M	
C918	257 0010 900	Chip Ceramic 0.01μF/50V	CK73B1H103K	
C919	254 4252 901	Electrolytic 22μF/10V	CE04W1A220M	
C921	253 9030 963	BC Ceramic 0.01μF/25V	CK45=1E103K	
OTHERS GROUP				Q'ty
	—	(P.W.Board)		(1)
L101,201	232 0177 006	MPX Filter		2
L102,202	235 0020 945	Inductor 153J		2
S701～719	212 5604 910	Tact Switch		19
S720,721	212 1078 906	Slide Switch(1-3)		2
X501	399 9018 003	Ceramic Vibrator CST4.00 MGW		1
T351	231 9805 004	105 kHz OSC Coil		1
TP101	205 0355 033	3 P KR Conn. Base(L)	ALC	1
TP102	205 0355 033	3 P KR Conn. Base(L)	Dolby	1
CN132	205 0355 033	3 P KR Conn. Base(L)		1
CN121	205 0355 046	4 P KR Conn. Base(L)		1
CN131	205 0355 046	4 P KR Conn. Base(L)		1
CN101	204 8284 035	9 P System Sockek		1
CN102	204 8284 022	15 P System Sockek		1
CN141	205 0815 007	17 P FFC Base(BTM)		1
CN141	205 0736 047	17 P FFC Conn. Base		1
CN122	205 0553 026	12 P Trap Conn. Base		1
CN133	205 0554 041	14 P Trap Conn. Base		1
CN123	205 0343 061	6 P Conn. Base(KR-PH)		1
CN134	205 0343 061	6 P Conn. Base(KR-PH)		1
CN151	205 0535 002	8 P Conn. Base		1
CS151	205 0536 001	8 P Conn. Socket		1
CN152	205 0535 028	12 P Conn. Base		1
CS152	205 0536 027	12 P Conn. Socket		1
CN161	205 0535 057	10 P Conn. Base		1
CS161	205 0536 056	10 P Conn. Socket		1
CN162	205 0535 099	11 P Conn. Base		1
CS162	205 0536 098	11 P Conn. Socket		1
	415 0309 055	P.V.C. Tube(L=7)		2

WIRING DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
LED / switch unit
2U-2556-2
CN141
2
16
1
17
Front panel side
Cassette mechanical unit (2)
Cassette mechanical unit (1)
CN134
1
6
CN133
1
13
2
14
CN123
1
6
CN122
1
11
2
12
CN141
1
17
2
16
Loader
output switch
Main unit
2U-2556-1
CN162
1
11
CN161
1
10
CN152
1
12
CN151
1
8
Loader
motor
Recording /
playback head
Erase head
CN101
9P System socket
CN102
15P System socket
Loader
input
switch
Capstan
motor
Loader
input switch
Playback head
CS162
1
11
CS161
1
10
Rec./PB EQ. Unit
2U-2556-4
CN121
4
1
CN131
4
1
CN132
3
1
CS152
1
12
CS151
1
8
Dolby unit
2U-2556-3


1
2
3
4
5
6
PB HEAD
Lch
Rch
PB/REC HEAD
E. HEAD
CN121
CN131
CN132
IC301 HD14053BFP
IC302 M5220FP
TR301 DTC124EK
TR105 2SK373(Y)
TR205 2SK373(Y)
PLAY 1/2
PB MUTE
EQ
DECK 1
DECK 2
PBGAIN
BIAS ADJ.
NORMAL : -2.1V
CHROME : +1V
METAL : +7.2V
T351 BIAS OSC TRANS
TR358 2SC1740S(S)
TR359 2SC1740S(S)
TR353 2SA933S
TR354 DTC114EK
TR356 2SA933S(S)
TR357 2SA933S(S)
TR355 DTC114EK
TR351 DTC114EK
TR352 DTC114EK
CHROME 2
METAL 2
REC/PB EQ. Unit
2U-2556B-4
L101 MPX FILTER
L201 MPX FILTER
TR106 DTC323TK
TR206 DTC323TK
Dolby Unit
2U-2556-3
IC303 CXA1331MT6
TR305 DTC114EK
ZD303 HZS9B-1
DOLBY R/P
TR304 DTC114EK
TR307 DTC114EK
TR306 DTC114EK
IC307 LA2000
TR316 2SC2412K
IC304 CXA1198AP
METAL
CHROME
NORMAL
TR312 DTC114EK
TR311 DTC114EK
TR310 DTC114EK
TR210 DTC323TK
TR209 2SC2412K
MS IN
CS161
CN161
M GND
+12V
+8V
-8V
IC601 BA6209
IC651 BA6209
TR601 2SB562(C)
TR602 DTC114EK
TR603 2SB562(C)
TR604 DTC114EK
TR651 2SB562(C)
TR652 DTC114EK
TR653 2SB562(C)
TR654 DTC114EK
SPEED ADJ DECK 1
SPEED ADJ. DECK 2
CN123
CN122
CN134
CN133
IN OUT LOAD 1
IN OUT LOAD 2
LOAD2 MOTOR
HALL IC 1 Supply
CAPSTAN MOTOR 1
SOL 1
HALF 1
MODE 1
CROME 1
HALL IC 1 take up
HALL IC 2 Supply
CAPSTAN MOTOR 2
SOL 2
REC-F2
HALF2
METAL 2
MODE 2
REC-R2
CROME 2
HALL IC 2 take up
X501 CST4.00MGW
D501 ISR35-200A
COUNT SEL
END SEL
D515 ISS254
D502 ISS254

▬▬▬ Rec Line
▬ ▬ ▬ PB Line
\\\\\\ +12V Line
▮▮▮▮▮ +5.4V Line

▬▬▬ +B Line
▬ ▬ ▬ −B Line
▮▮▮▮▮ +5.4V Line

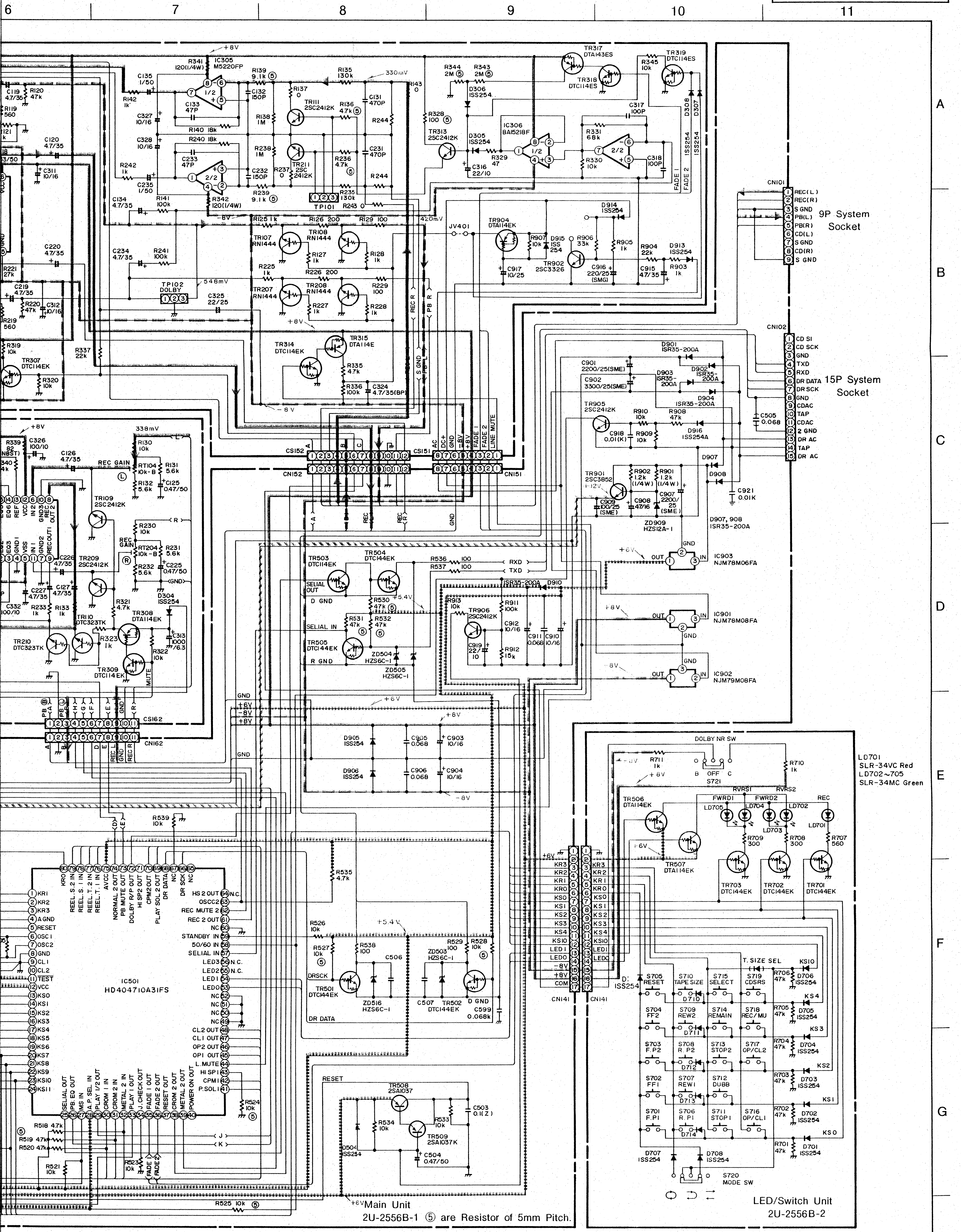
WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manifacturer.

CAUTION:
Before returning the unit to t
leakage current exceeds 0.5
defective.

WARNING
DO NOT return the unit to th

SCHEMATIC DIAGRAM

CASSETTE DECK SECTION


6
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11
A
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C
D
E
F
G
H
9P System Socket
CN101
15P System Socket
CN102
IC305 M5220FP
IC306 BA15218F
IC501 HD404710A3IFS
IC901 NJM78M08FA
IC902 NJM79M08FA
IC903 NJM78M06FA
TP101
TP102 DOLBY
CS151
CN151
CS152
CN152
CS162
CN162
CN141
DOLBY NR SW
S721
S720 MODE SW
LD701 SLR-34VC Red
LD702~705 SLR-34MC Green
T. SIZE SEL
Main Unit
2U-2556B-1 ⑤ are Resistor of 5mm Pitch.
LED/Switch Unit
2U-2556B-2

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is defective.

WARNING

DO NOT return the unit to the customer until the problem is located and corrected.

NOTES

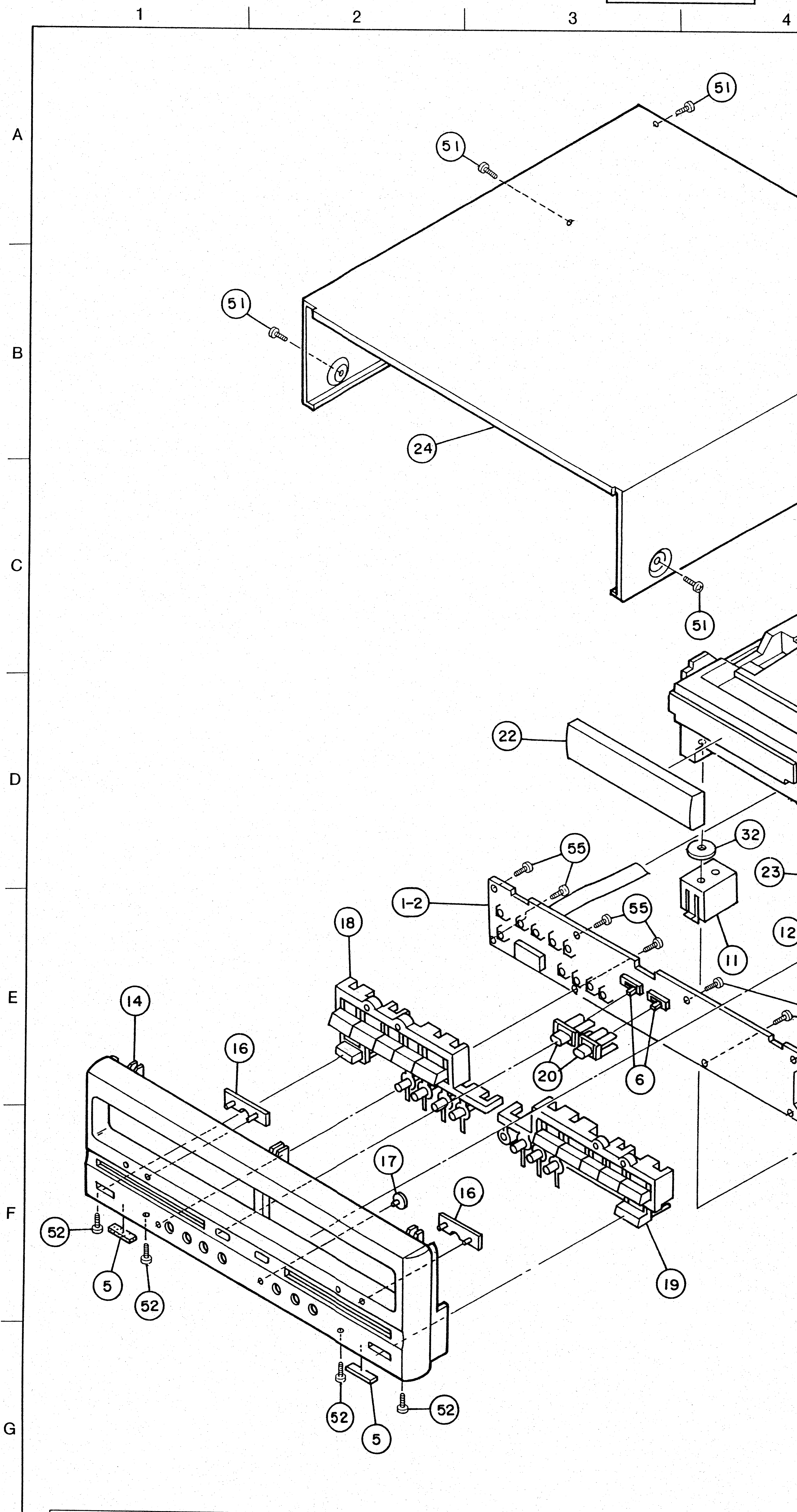
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

CASSETTE DECK SECTION

PARTS LIST OF UDR-65 EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	2U- 2556 B	Cassette Deck Unit Ass'y		1S
1-1	—	Main Unit		(1)
1-2	—	LED/SW Unit		(1)
1-3	—	Dolby Unit		(1)
1-4	—	Rec/PB EQ. Unit		(1)
2	254 4256 790	Chemicon 2200μF/25 V	C901,907	2
3	254 4257 702	Chemicon 3300μF/25 V	C902	1
◉ 4	411 1225 301	Main Chassis		1
5	124 0079 007	Felt Sheet		4
6	212 1078 906	Slide Switch(1-3)		2
◉ 7	105 1083 017	Rear Panel		1
◉ 8	412 3470 102	Spring Plate		1
◉ 9	412 3685 104	P.W.B Bracket		1
◉ 10	HM65	Casette Mecha. Unit		1
11	449 0089 103	Mecha. Holder(F,L)		2
12	449 0090 105	Mecha. Holder(F,R)		2
13	449 0091 104	Mecha. Holder(R)		4
◉ 14	146 1449 306	Front Panel		1
15	—	—		
16	143 0787 109	Lens(A)		2
17	143 0789 000	Lens(C)		1
18	113 1587 103	Play Button(1)		1
19	113 1588 102	Play Button(2)		1
20	113 1611 105	Slide Knob		2
21	009 0091 003	17 P FFC Cable		1
22	146 1461 203	Loader Panel(1)		1
23	146 1462 202	Loader Panel(2)		1
◉ 24	102 0537 015	Top Cover		1
★ 25	513 2120 002	Rating Sheet		1
26	204 8284 035	9 P System Socket		1
27	204 8284 022	15 P System Socket		1
★ 28	513 2158 003	Serial No. Sheet		1
◉ 29	412 3723 008	L. Angle		1
★ 30	445 0033 005	Wire Clamp Band		1
31	461 0758 065	Rubber Sheet		1
32	477 0224 031	SP Washer		2
SCREWS				
51	473 7015 018	Tapping Screw (S) 3×8	Black	18
52	473 7002 021	Tapping Screw (S) 3×8	Black	6
53	473 7500 044	Tapping Screw (P) 3×8	Black	2
54	473 3808 009	Tapping Screw (1) 3×25		8
55	473 7505 007	Tapping Screw (P) 2.6×8	Black	8
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	505 0154 095	Cabinet Cover		1
102	503 1074 000	Cushion		1
103	503 1075 106	Top Cushion		1
104	501 1705 108	Carton Case		1

EXPLODED VIEW



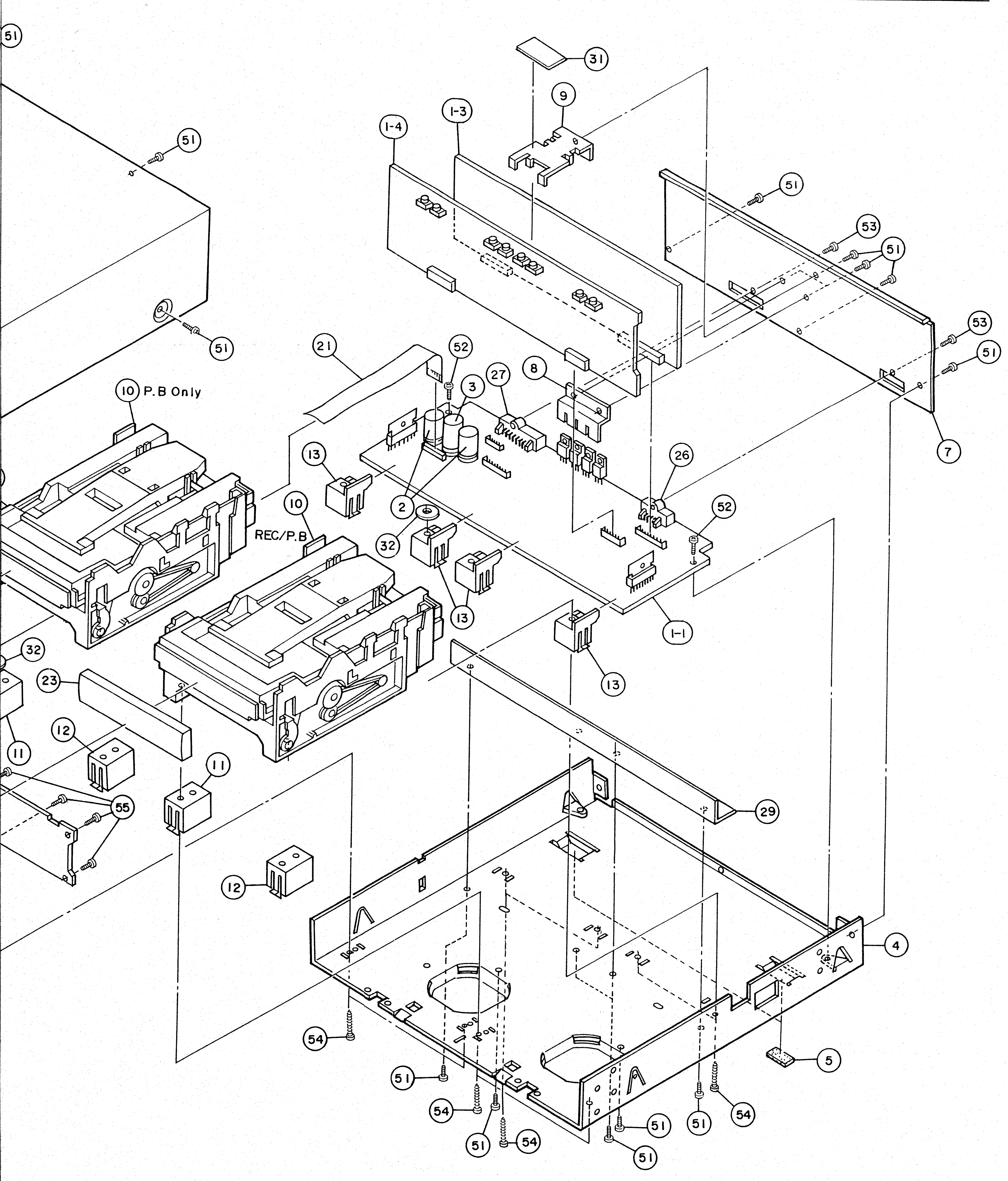
NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some ca supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

VIEW

4 5 6 7 8 9



51
31
9
1-3
1-4
51
51
51
53
51
53
51
7
51
21
52
3
27
8
10 P.B Only
13
26
2
52
10
REC/P.B
32
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1-1
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51
51
54
5
51

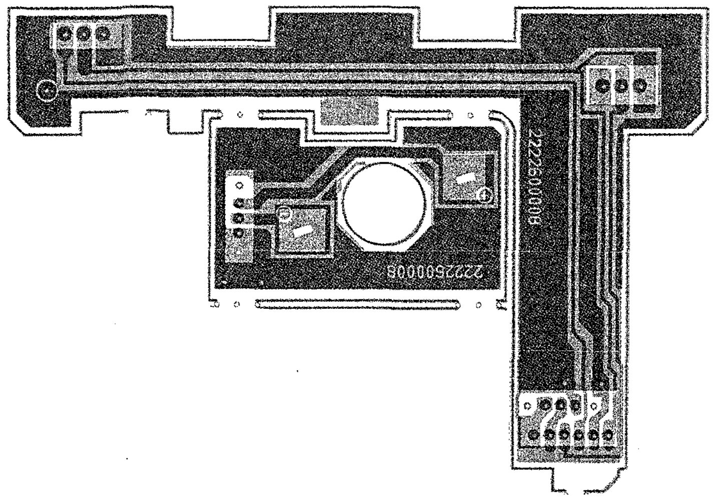
g, or in some case

HM-65R : REC/PB, HM-65P:PB ONLY PARTS LIST

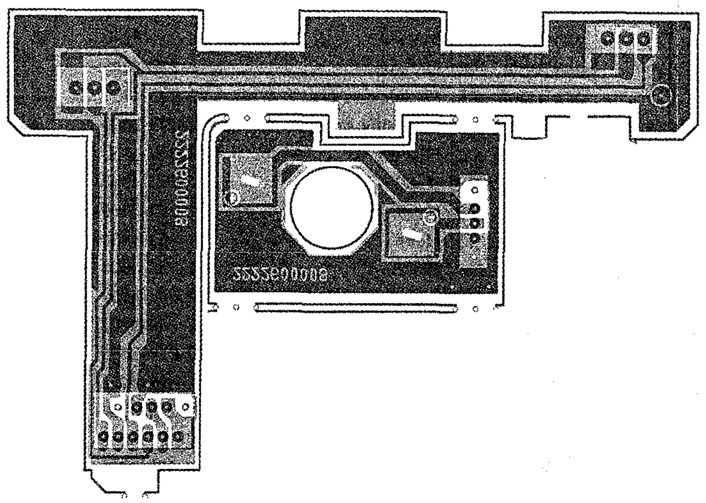
Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉★ 1	411 1163 612	Loading Mech. Ass'y		2
◉ 2	411 1156 409	Mech. Base Ass'y		2
3	424 0183 000	Pulley Gear		2
4	423 0064 003	Belt		2
5	424 0182 001	Gear		2
6	475 1119 110	Slit Washer	1.5X3.5X0.25	4
7	433 0574 202	Push Lever		2
◉ 8	412 3467 102	Push Bracket		2
9	463 0708 008	Lever Spring		2
10	463 0709 007	Push Bracket Spring		2
11	433 0573 407	Clamper Arm		2
12	463 0710 203	Clamper Spring		2
13	431 0323 004	Clamper Press		4
14	463 0707 009	Clamper Press Spring		4
15	431 0329 309	Loader Frame Ass'y	Loader Slider, C.Tray Ass'y	2
16	217 0158 000	Loading Motor		2
17	421 0618 000	Motor Pulley		2
◉ 18	338 0165 002	Cassette Mech. (REC/PB) Ass'y	CRF-463	1
◉ 18	338 0166 001	Cassette Mech. (PB only) Ass'y	CRF-464	1
◉ 19	412 3669 007	Shield Bracket		2
◉ 20	412 3517 104	Shield Ring	PB only	1
◉ 21	2U- 2600	P.W.B. Unit Ass'y		2
★ 22	203 8334 005	5P EH-3P 4P PH Conn. Cord	REC/PB only	1
★ 22	203 4856 024	3P EH-4P PH Conn. Cord	PB only	1
★ 23	203 0370 015	6 P PH-SAN Conn. Cord		2
24	—	—		
25	212 1077 004	Micro Slide Switch		4
26	—	—		
27	—	—		
SCREWS				
51	—	—		
52	471 3201 011	Bind Screw 2.6X4		4
53	473 7500 015	Tapping Screw (P) 3X8		8
54	—	—		
55				

2U-2600 P.W.B. UNIT ASS'Y

Component Side



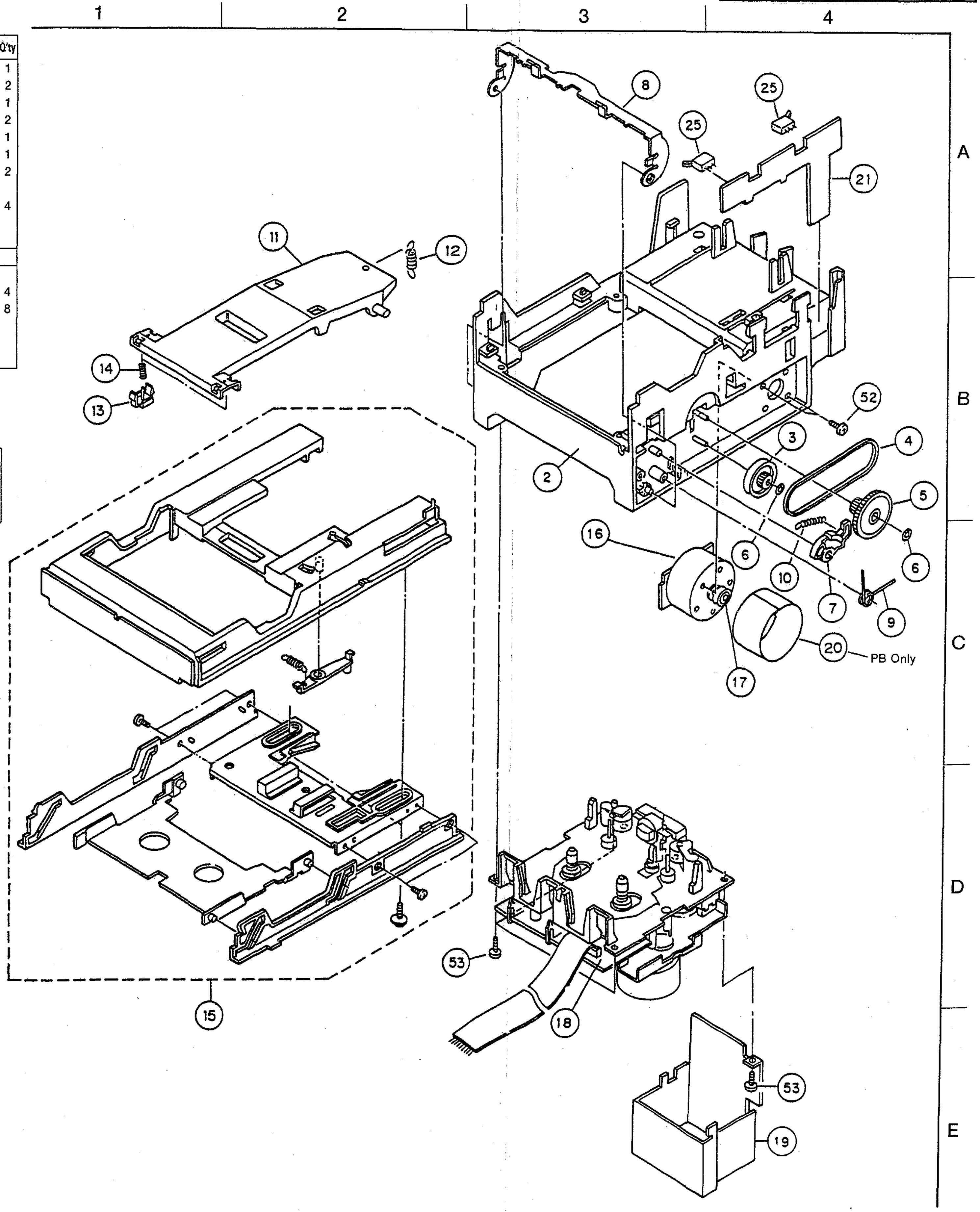
Pattern Side



P.W.B. UNIT ASS'Y PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Q'ty
	—	(P.W.Board)		(2)
	204 0370 015	6 P PH-SAN Conn. Cord		2
	205 0409 031	3 P DIP Socket		4
	002 0042 006	3 C Ribon Wire Ass'y		2
	212 1077 004	Micro Slide Switch		4

CASSETTE MECHANISM : HM-65



CASSETTE DECK SECTION

DISASSEMBLY PROCEDURES

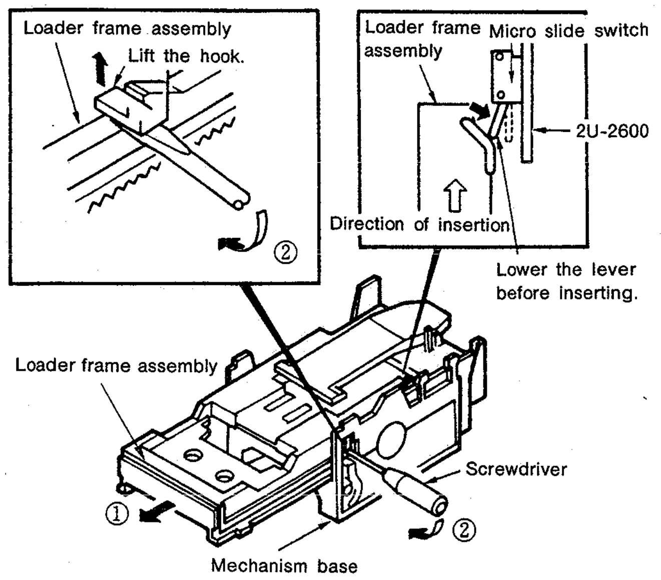
(Follow these procedures in reverse order to reassemble.)

1. Removing the loader frame assembly

① Pull the loader frame assembly out forwards until it stops.

② Insert a screwdriver with a narrow tip into the section indicated with the arrow, then lift the hook and pull the loader frame assembly out forwards.

NOTE: When reinserting the loader frame assembly, be careful not to damage the micro slide switch.



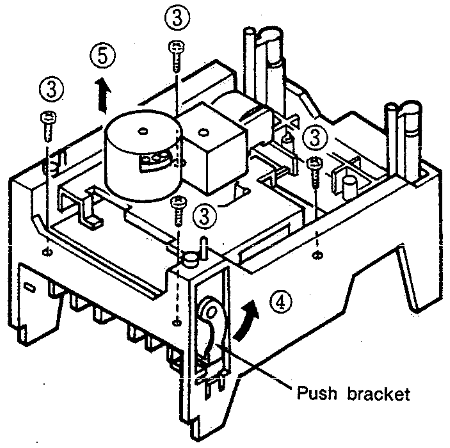
2. Removing the cassette mechanism

③ Remove the four screws fastening the cassette mechanism.

④ Pressing the push bracket in the direction of the arrow...

⑤ ...lift the cassette mechanism up and off.

NOTE: The push bracket may be deformed if the cassette mechanism is lifted without pressing the push bracket in the direction of the arrow. (The same is true when reassembling.) A deformed push bracket cannot be used.
After fastening the cassette mechanism with the screws, check that the push bracket moves (rotates) properly.



3. Removing the push bracket

Do this with the loader frame assembly and cassette mechanism removed.

⑥ Remove the lever spring.

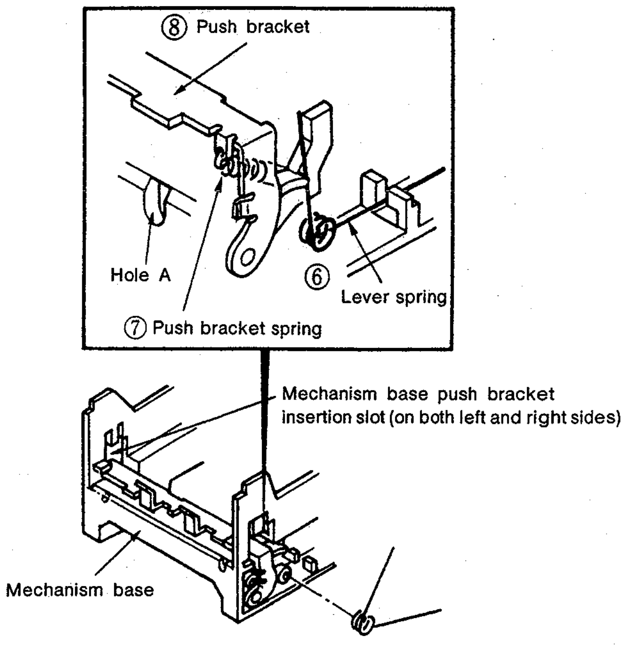
⑦ Remove the push bracket spring using a spring catching rod, etc., through hole A.

⑧ Remove the push bracket.

(a) Remove the bar rings of the push bracket from the push bracket boss of the mechanism base in the order of left side (on which a spring is not attached), then right side.

(b) Bring out first the left then the right side from the mechanism base's push bracket insertion slot.

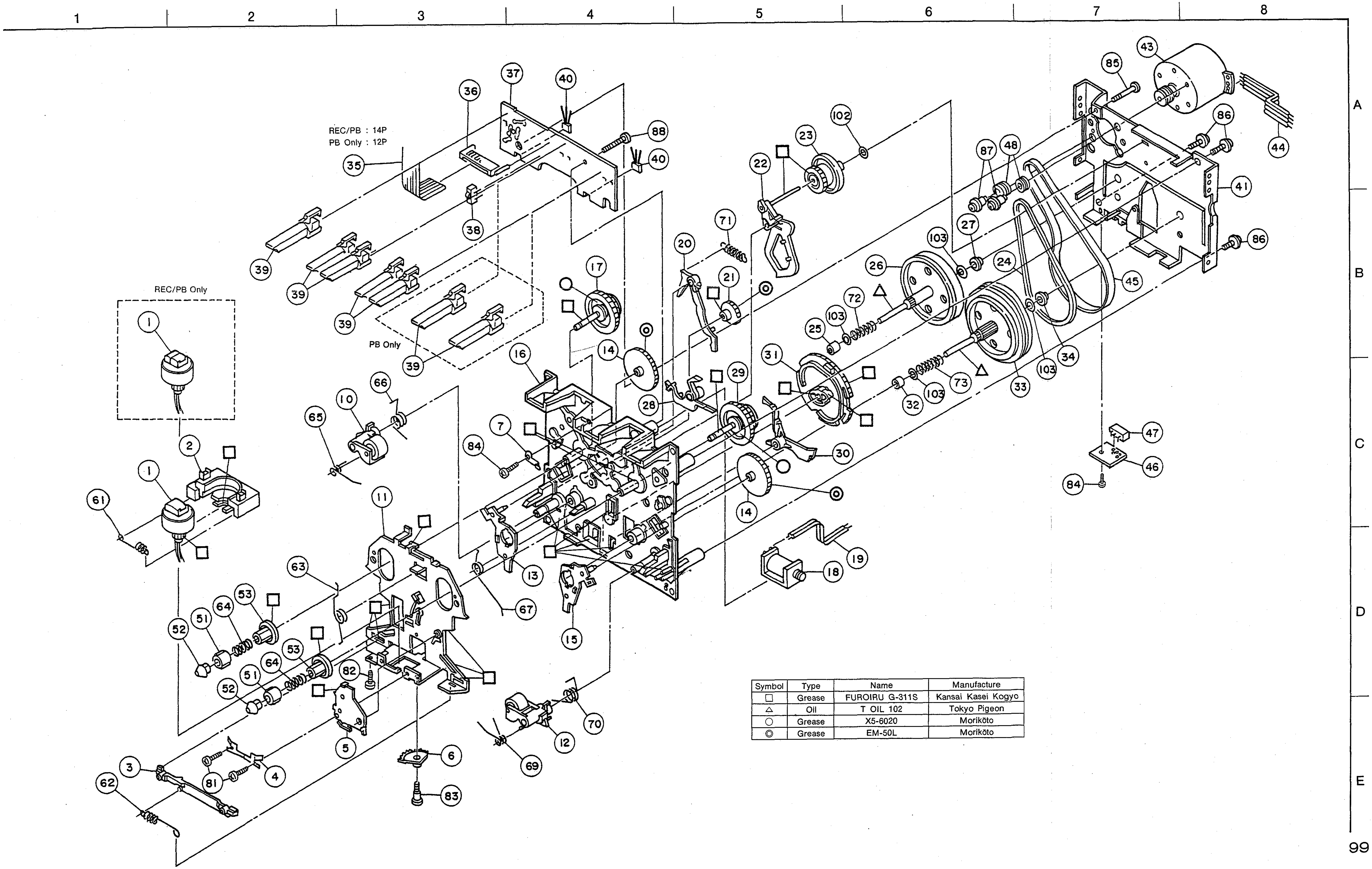
NOTE: Be careful not to deform the push bracket (do not forcibly disassemble or assemble it). A deformed push bracket cannot be used.


⑧ Push bracket
Hole A
⑥
Lever spring
⑦ Push bracket spring
Mechanism base push bracket insertion slot (on both left and right sides)
Mechanism base

CASSETTE MECHANISM PARTS LIST

REC/PB Mecha.:338 0165 002 (CRF-463)
PB only Mecha.:338 0166 001 (CRF-464)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	948 0000 126	Holder Head Ass'y for REC/PB	22-093-4269	1
◉ 1	948 0000 113	Holder Head Ass'y for PB only	22-093-4067	1
◉ 2	948 0000 207	Head Frame	22-219-1026	2
3	948 0000 304	Head Lever	22-259-2012	2
4	948 0000 401	Spring Azimuth	16-160-4032	2
5	948 0000 508	Assist Arm Ass'y	22-093-4053	2
6	948 0000 605	Head Arm Gear	22-239-4020	2
7	948 0000 702	Stopper Plate	22-119-4283	2
8	—	—		
9	—	—		
10	948 8000 809	Pinch Roller (L) Ass'y	22-093-4149	2
◉ 11	948 8000 906	Head Slide Chassis	22-112-2022	2
12	948 0001 002	Pinch Roller (R) Ass'y	22-093-4150	2
13	948 0010 200	Play Arm (L) Ass'y	22-239-3257	2
14	948 0010 307	Play Gear	22-222-4282	4
15	948 0010 213	Play Arm (R) Ass'y	22-239-3256	2
◉ 16	948 0001 400	OS Chassis	22-210-1023	2
17	948 0001 507	Sub Reel (L) Ass'y	22-093-3071	2
18	948 0001 604	Solenoide Ass'y	22-093-4417 or 07-W021C	2
19	—	Wire	22-072-4105	2
20	948 0001 808	RVS Arm	22-239-3010	2
21	948 0001 905	FF Gear	22-222-4048	2
22	948 0002 001	FR Arm Ass'y	22-093-4061	2
23	948 0002 108	FR Pulley Ass'y	22-093-3060	2
24	948 0002 205	FR Belt	22-083-4059	2
25	948 0002 302	Metal	22-262-4033	2
26	948 0005 503	Flywheel (L) Ass'y	22-093-3360	2
27	948 0002 315	Metal	16-262-4031	2
28	948 0002 506	Brake Arm	22-239-3028	2
29	948 0001 510	Sub Reel (R) Ass'y	22-093-4151	2
30	948 0002 603	Trigger Arm	22-268-3008	2
31	948 0002 700	Cam Gear	22-221-2090	2
32	948 0005 600	Metal	PBE16449	2
33	948 0010 404	Flywheel (R) Ass'y	22-220-3386	2
34	948 0002 331	Metal	16-262-4030	2
◉ 35	948 0002 849	Wire (14 P) for REC/PB	16-072-4238	1
◉ 35	948 0002 852	Wire (12 P) for PB only	22-072-4098	1
◉ 36	948 0002 904	Wire Holder	16-219-2382	2
◉ 37	948 0003 000	P.W.B. Board	22-070-3261	2
38	948 0005 804	Mode Switch	04-MPU10101MMB0	2
39	948 0003 204	Leaf Switch for REC/PB	04-MTS10045MVJ0	5
39	948 0003 204	Leaf Switch for PB only	04-MTS10045MVJ0	2
40	948 0003 301	Hall IC(LB9051A)	00-LB9051A	4
◉ 41	—	Flaywheel Bracket	22-119-2441	2
42	—	—		
43	948 0010 501	Motor Ass'y	22-093-4532	2
44	—	Wire	16-072-4056	2
45	948 0006 104	Main Belt	02-084-4078	2
◉ 46	948 0003 806	P.W.B. Board	22-070-4046	2
◉ 47	205 0234 057	5P EH Sld Conn Base REC/PB		1
◉ 47	204 0234 031	3P EH Sld Conn Base PB only		1
◉ 48	948 0004 106	Cushion Rubber	PBE13360	4
49	—	—		
50	—	—		
51	948 0004 300	Reel (A)	22-228-3210	4
52	948 0004 407	Reel (B)	22-228-3211	4
53	948 0004 504	Reel Pulley	22-223-3212	4
61	948 0004 708	Spring Head Hold	01-080-4251	2
62	948 0004 711	Head Lever Spring	01-080-4249	2
63	948 0004 724	Spring	01-082-4250	2
64	948 0004 737	Back Tention Spring	01-081-4333	4
65	948 0004 740	Pinch Roller Retarn Spring	01-082-4253	2
66	948 0004 753	Pinch Roller Hold Spring	01-082-4262	2
67	948 0004 766	Spring	01-082-4337	2
68	—	—		
69	948 0004 779	Pinch Roller Retarn Spring	01-082-4254	2
70	948 0004 782	Pinch Roller Hold Spring	01-082-4261	2
71	948 0010 608	FR Arm Spring	01-080-4392	2
72	948 0006 515	Spring	01-081-4073	2
73	948 0006 528	Spring	01-081-4309	2
81	948 0004 805	Azimuth Screw	03-300-4056	4
82	948 0004 818	Screw	PGSL20A2006	2
83	948 0004 821	Head Arm Hold Screw	03-300-4043	2
84	948 0004 834	Screw	PGSD10A2004	4
85	948 0004 847	Screw	PGSD20A2016	2
86	948 0004 850	Screw	PGSL15A2608	6
87	948 0004 863	Motor Hold Screw	PBE13913	4
88	948 0004 876	Screw	PGSL10A12608	2
101	—	—		
102	948 0004 915	Washer	PGWP16x040040	2
103	948 0004 928	Washer	PGWP26x042013	8
104	—	—		
105				


1
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A
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C
D
E
REC/PB : 14P
PB Only : 12P
REC/PB Only
PB Only
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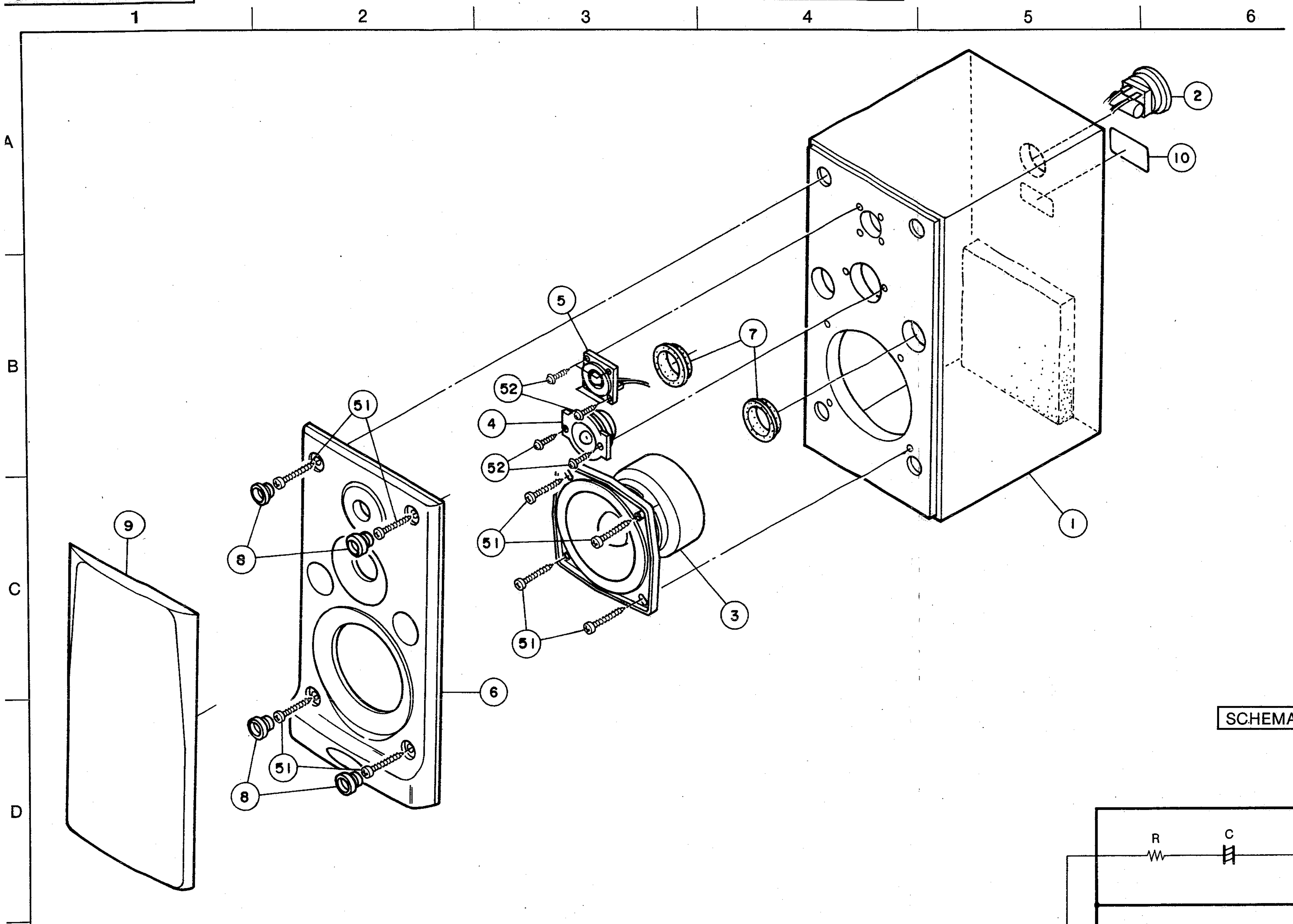
Symbol	Type	Name	Manufacture
□	Grease	FUROIRU G-311S	Kansai Kasei Kogyo
△	Oil	T OIL 102	Tokyo Pigeon
○	Grease	X5-6020	Moriköto
◎	Grease	EM-50L	Moriköto

EXPLODED VIEW



PARTS LIST OF USC-65 EXPLODED VIEW

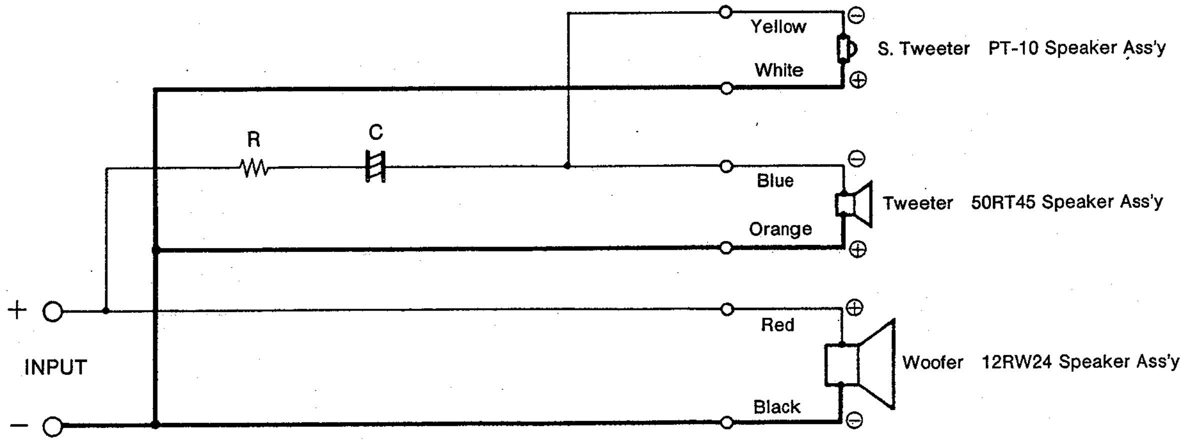
Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	GEN7510 H1	Cabinet Sub Ass'y		2
2	349 9020 106	Net Work Ass'y		2
◉ 3	302 9023 007	Speaker 12RW24 Ass'y	Woofer	2
└─3-1	129 9020 104	WF. Packing		(2)
◉ 4	304 9224 002	Speaker 50RT45 Ass'y	Tweeter	2
└─4-1	129 9021 103	TW. Packing		(2)
◉ 5	304 9025 001	Speaker PT-10 Ass'y	S.Tweeter	2
◉ 6	146 9276 209	Front Panel		2
7	129 9019 005	Urethane Spacer		4
8	402 9006 007	Holder		8
◉ 9	103 9184 103	Grille Board Ass'y		2
10	513 9335 104	Rating Sheet		2
11	513 2158 003	Serial No. Sheet		2
★ 12	513 2159 002	Green Point Label		1
SCREWS				
51	473 0410 021	Tapping Screw (1) 4×20	Black	16
52	473 0309 022	Tapping Screw (1) 3×16	Black	12
53				
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	504 9118 039	Stylen Paper		2
102	505 9122 031	Poly Cover		2
103	505 9119 002	Envelope		1
104	009 9022 015	Output Cord Ass'y	L=2 m	2
105	503 9243 008	Cushion Ass'y		1
106	501 9237 050	Carton Case		1
107				
NETWORK ASS'Y (Part No.: 349 9020 106)				
71	205 0821 004	2 P Terminal Ass'y		2
72	009 9026 040	1 P Wire Ass'y (Red)	Woofer(+)L=330	2
73	009 9027 049	1 P Wire Ass'y (Black)	Woofer(−)L=330	2
74	009 9035 002	2 P Wire Ass'y (Orange/White)	Tweeter/S.Tweeter (+)L=170/300	2
75	009 9041 009	2 P Wire Ass'y (Blue/Yellow)	Tweeter/S.Tweeter (−)L=170/300	2
76	254 4447 004	Chemicon 2.2μF/50V (Bipole)	CE04W1H2R2MBP	2
77	243 2010 006	Wire Wound Resistor 2.7 ohm/5W	RW98A3H2R7K	2
78				

NOTE ON PARTS LIST

- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

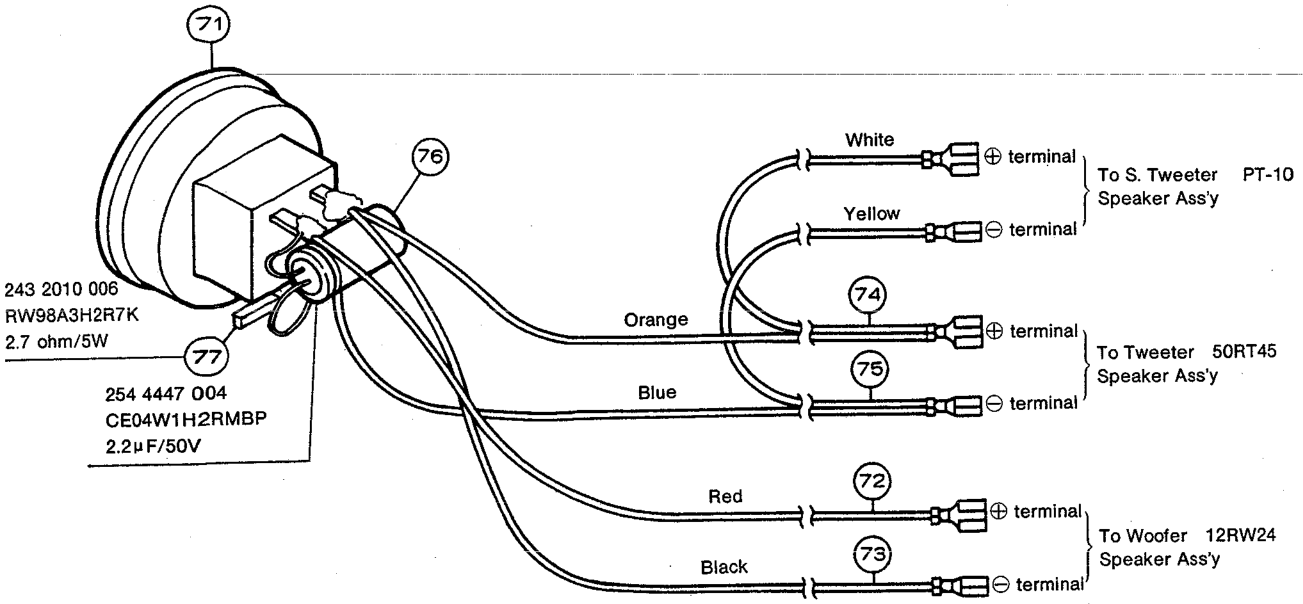
SCHEMATIC DIAGRAM


Yellow
White
⊖
⊕
S. Tweeter PT-10 Speaker Ass'y
R
C
Blue
Orange
⊖
⊕
Tweeter 50RT45 Speaker Ass'y
+
INPUT
−
Red
Black
⊕
⊖
Woofer 12RW24 Speaker Ass'y

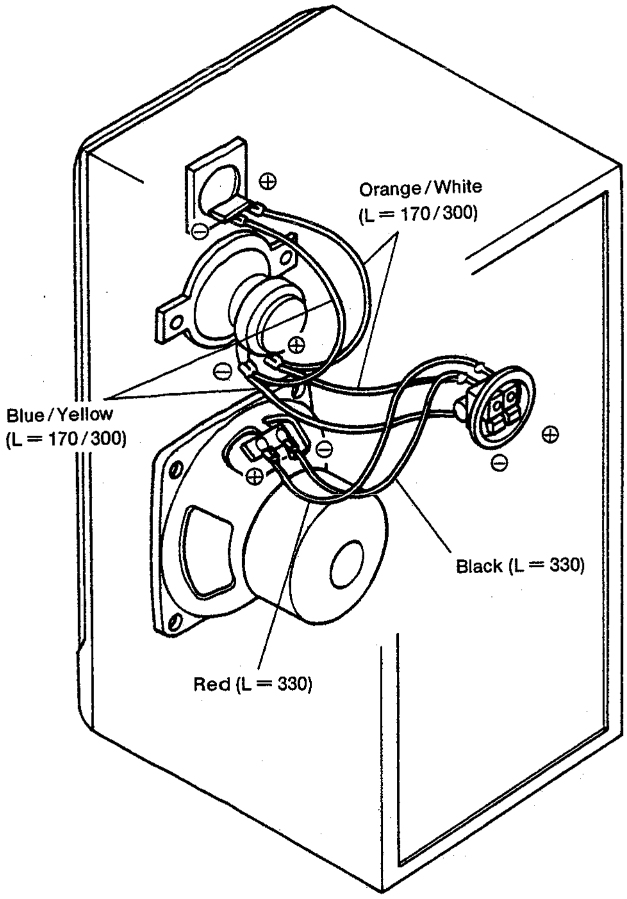
C : 254 4447 004 CE04W1H2R2MBP 2.2μ F/50V (Bipole)
R : 243 2010 006 RW98A3H2R7K 2.7 ohm/5W

NETWORK Ass'y

(349 9020 106)


71
76
243 2010 006
RW98A3H2R7K
2.7 ohm/5W
77
254 4447 004
CE04W1H2RMBP
2.2μF/50V
White
Yellow
Orange
Blue
Red
Black
74
75
72
73
⊕ terminal
⊖ terminal
⊕ terminal
⊖ terminal
⊕ terminal
⊖ terminal
To S. Tweeter PT-10 Speaker Ass'y
To Tweeter 50RT45 Speaker Ass'y
To Woofer 12RW24 Speaker Ass'y

WIRE FORMING


Orange/White
(L = 170/300)
Blue/Yellow
(L = 170/300)
Black (L = 330)
Red (L = 330)
⊕
⊖
⊕
⊖
⊕
⊖
⊕
⊖

① Place so that the network assembly has the red terminal (+) on the right side, then attach.

② For connections to the super tweeter and the tweeter, connect the orange/white leads to the (+) side (length = 170/300mm) and the blue/yellow leads (length = 170/300mm) to the (−) side.

③ For the connections to the woofer, connect the red lead (length = 330mm) to the (+) side and the black lead (length = 330mm) to the (−) side.